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## **Appendix B. - Newborn Screening Quality Assurance Programs**

- Australasia - Australasian Quality Assurance Program, National Testing Center 2<sup>nd</sup> Floor, National Women's Hospital, Claude Road, Epsom, Auckland, New Zealand.
- Europe - Deutsche Gesellschaft für Klinische Chemie eV, Im Muhlenbach 52a, D-53127 Bonn, Germany.
- United Kingdom External Quality Assurance Scheme, Wolfson EQA laboratory, PO Box 3909, Birmingham, B15 2UE, UK.
- USA- Centers for Disease Control and Prevention (CDC), 4770 Burford Highway NE, Atlanta, GA 30341-3724, USA.

*(The UK NEQAS program has a charge to participants, but for the other two programs there is no charge).*

## **Appendix C – Glossary of Abbreviations**

<b>AITD =</b>	<b>Autoimmune Thyroid Disease</b>
<b>ANS =</b>	<b>8-Anilino-1-Napthalene-Sulphonic Acid</b>
<b>ATD =</b>	<b>Anti-Thyroid Drug Treatment</b>
<b>CT =</b>	<b>Calcitonin</b>
<b>DTC =</b>	<b>Differentiated Thyroid Carcinoma</b>
<b>FDH =</b>	<b>Familial Dysalbuminemic Hyperthyroxinemia</b>
<b>FFA =</b>	<b>Free Fatty Acids</b>
<b>FMTC =</b>	<b>Familial Medullary Thyroid Carcinomas</b>
<b>FNA =</b>	<b>Fine Needle Aspiration</b>
<b>FT3 =</b>	<b>Free T3</b>
<b>FT4 =</b>	<b>Free T4</b>
<b>HCG =</b>	<b>Human chorionic gonadotropin</b>
<b>IMA =</b>	<b>Immunometric Assay</b>
<b>L-T4 =</b>	<b>Levothyroxine</b>
<b>MEN =</b>	<b>Multiple Endocrine Neoplasia</b>
<b>MTC =</b>	<b>Medullary Thyroid Carcinoma</b>
<b>NTI =</b>	<b>Nonthyroidal Illness</b>
<b>Pg=</b>	<b>Pentagastrins</b>
<b>RET =</b>	<b>ret Proto-oncogene</b>
<b>RIA =</b>	<b>Radioimmunoassay</b>
<b>T4 =</b>	<b>Thyroxine</b>
<b>T3 =</b>	<b>Triiodothyronine</b>
<b>TBG =</b>	<b>Thyroxine Binding Globulin</b>
<b>TBPA=</b>	<b>Thyroxine Binding Prealbumin</b>
<b>TT4 =</b>	<b>Total Thyroxine</b>
<b>TT3 =</b>	<b>Total Triiodothyronine</b>
<b>TTR=</b>	<b>Transthyretin</b>
<b>Tg =</b>	<b>Thyroglobulin</b>
<b>TgAb =</b>	<b>Thyroglobulin Autoantibody</b>
<b>TPO =</b>	<b>Thyroid Peroxidase</b>
<b>TPOAb =</b>	<b>Thyroid Peroxidase Autoantibody</b>
<b>TBAb/TSBAb =</b>	<b>TSH Receptor Blocking Antibody</b>
<b>TBII =</b>	<b>TSH Binding Inhibitory Immunoglobulins</b>
<b>TRAb =</b>	<b>TSH Receptor Antibody</b>
<b>TSAb =</b>	<b>Thyroid Stimulating Antibody</b>

**TSH = Thyroid Stimulating Hormone (Thyrotropin)**

## References

1. Nohr SB, Laurberg P, Borlum KG, et al. 1993. Iodine deficiency in pregnancy in Denmark. Regional variations and frequency of individual iodine supplementation. *Acta Obstet Gynecol Scand.* 72:350-3.
2. Glinoe D. 2001. Pregnancy and iodine. *Thyroid.* 11:471-81.
3. Hollowell JG, Staehling NW, Hannon WH, et al. 1998. Iodine nutrition in the United States. Trends and public health implications: iodine excretion data from National Health and Nutrition Examination Surveys I and III (1971-1974 and 1988-1994). *J Clin Endocrinol Metab.* 83:3398-400.
4. Hollowell JG, Staehling NW, Hannon WH, et al. 2002. Serum thyrotropin, thyroxine, and thyroid antibodies in the United States population (1988 to 1994): NHANES III. *J Clin Endocrinol Metab.* 87:489-99.
5. Wartofsky L, Glinoe D, Solomon D, et al. 1990. Differences and similarities in the diagnosis and treatment of Graves disease in Europe, Japan and the United States. *Thyroid.* 1:129-35.
6. Singer PA, Cooper DS, Levy EG, et al. 1995. Treatment guidelines for patients with hyperthyroidism and hypothyroidism. *JAMA.* 273:808-12.
7. Singer PA, Cooper DS, Daniels GH, et al. 1996. Treatment Guidelines for Patients with Thyroid Nodules and Well-differentiated Thyroid Cancer. *Arch Intern Med.* 156:2165-72.
8. Vanderpump MPJ, Ahlquist JAO, Franklyn JA, et al. 1996. Consensus statement for good practice and audit measures in the management of hypothyroidism and hyperthyroidism. *Br Med J.* 313:539-44.
9. Laurberg P, Nygaard B, Glinoe D, et al. 1998. Guidelines for TSH-receptor antibody measurements in pregnancy: results of an evidence-based symposium organized by the European Thyroid Association. *Eur J Endocrinol.* 139:584-6.
10. Ladenson PW, Singer PA, Ain KB, et al. 2000. American Thyroid Association Guidelines for detection of thyroid dysfunction. *Arch Intern Med.* 160:1573-5.
11. Cobin RH, Gharib H, Bergman DA, et al. 2001. AACE/AAES Medical/Surgical Guidelines for Clinical Practice: Management of Thyroid Carcinoma. *Endocrine Pract.* 7:11203-20.
12. Braverman LE, and Utiger RD, eds. 2000. *The Thyroid. A Fundamental and Clinical Text.* 9th ed., J.B. Lippincott Co, New York, 2000.
13. DeGroot LJ, Larsen PR, Hennemann G, eds. 2000. *The Thyroid and Its Diseases.* ([www.thyroidmanager.org](http://www.thyroidmanager.org)).
14. Piketty ML, D'Herbomez M, Le Guillouzic D, et al. 1996. Clinical comparison of three labeled-antibody immunoassays of free triiodothyronine. *Clin Chem.* 42:933-41.
15. Sapin R, Schlienger JL, Goichot B, et al. 1998. Evaluation of the Elecsys free triiodothyronine assay; relevance of age-related reference ranges. *Clin Biochem.* 31:399-404.
16. Robbins J. 1996. Thyroid hormone transport proteins and the physiology of hormone binding. 96-110 pp.
17. Demers LM. 1999. Thyroid function testing and automation. *J Clin Ligand Assay.* 22:38-41.
18. Wardle CA, Fraser WD, and Squire CR. 2001. Pitfalls in the use of thyrotropin concentration as a first-line thyroid-function test. *Lancet.* 357:1013-4.
19. Spencer CA, LoPresti JS, Patel A, et al. 1990. Applications of a new chemiluminometric thyrotropin assay to subnormal measurement. *J Clin Endocrinol Metab.* 70:453-60.
20. Meikle, A. W., J. D. Stringham, M. G. Woodward, et al. 1988. Hereditary and environmental influences on the variation of thyroid hormones in normal male twins. *J Clin Endocrinol Metab.* 66:588-92.
21. Cooper, D. S., R. Halpern, L. C. Wood, A. et al. 1984. L-thyroxine therapy in subclinical hypothyroidism. *Ann Intern Med.* 101:18-24.
22. Biondi B, Fazio E, Palmieri EA, et al. 1999. Left ventricular diastolic dysfunction in

patients with subclinical hypothyroidism. *J Clin Endocrinol Metab.* 2064-7.

23. Canaris GJ, Manowitz NR, Mayor G, et al. 2000. The Colorado Thyroid Disease Prevalence Study. *Arch Intern Med.* 160:19-27.

24. Hak AE, Pols HAP, Visser TJ, et al 2000. Subclinical Hypothyroidism is an independent risk factor for atherosclerosis and myocardial infarction in elderly women: the Rotterdam Study. *Ann Intern Med.* 132:270-8.

25. Hershman JM, Pekary AE, Berg L, et al. 1993. Serum thyrotropin and thyroid hormone levels in elderly and middle-aged euthyroid persons. *J Am Geriatr Soc.* 41:823-8.

26. Fraser CG. 1993. Age-related changes in laboratory test results. Clinical applications. *Drugs Aging.* 3:246-57.

27. Drinka PJ, Siebers M, and Voeks SK. 1993. Poor positive predictive value of low sensitive thyrotropin assay levels for hyperthyroidism in nursing home residents. *South Med J.* 86:1004-7.

28. Vanderpump MPJ, Tunbridge WMG, French JM, and e. al. 1995. The incidence of thyroid disorders in the community; a twenty year follow up of the Whickam survey. *Clin Endocrinol.* 43:55-68.

29. Sawin CT, Geller A, Kaplan MM, and et al. 1991. Low serum thyrotropin (thyroid stimulating hormone) in older persons without hyperthyroidism. *Arch Intern Med.* 151:165.

30. Parle JV, Maisonneuve P, Sheppard MC, et al. 2001. Prediction of all-cause and cardiovascular mortality in elderly people from one low serum thyrotropin result: a 10-year study. *Lancet.* 358:861-5.

31. Nelson JC, Clark SJ, Borut DL, et al. 1993. Age-related changes in serum free thyroxine during childhood and adolescence. *J Pediatr.* 123:899-905.

32. Adams LM, Emery JR, Clark SJ, et al. 1995. Reference ranges for newer thyroid function tests in premature infants. *J Pediatr.* 126:122-7.

33. Lu FL, Yau KI, Tsai KS, et al. 1999. Longitudinal study of serum free thyroxine and thyrotropin levels by chemiluminescent immunoassay during infancy. *T'aiwan Erh K'o i Hseh Hui Tsa Chih.* 40:255-7.

34. Zurakowski D, Di Canzio J, and Majzoub JA. 1999. Pediatric reference intervals for serum thyroxine, triiodothyronine, thyrotropin and free thyroxine. *Clin Chem.* 45:1087-91.

35. Fisher DA, Nelson JC, Carlton Ei, et al. 2000. Maturation of human hypothalamic-pituitary-thyroid function and control. *Thyroid.* 10:229-34.

36. Fisher DA, Schoen EJ, La Franchi S, et al. 2000. The hypothalamic-pituitary-thyroid negative feedback control axis in children with treated congenital hypothyroidism. *J Clin Endocrinol Metab.* 85:2722-7.

37. Penny R, Spencer CA, Frasier SD, et al. 1983. Thyroid stimulating hormone (TSH) and thyroglobulin (Tg) levels decrease with chronological age in children and adolescents. *J Clin Endocrinol Metab.* 56:177-80.

38. Verheecke P. 1997. Free triiodothyronine concentration in serum of 1050 euthyroid children is inversely related to their age. *Clin Chem.* 43:963-7.

39. Glinoe D, De Nayer P, Bourdoux P, and et al. 1990. Regulation of maternal thyroid function during pregnancy. *J Clin Endocrinol Metab.* 71:276.

40. Glinoe D. 1997. The regulation of thyroid function in pregnancy: pathways of endocrine adaptation from physiology to pathology. *Endocrinol Rev.* 18:404-33.

41. Weeke J, Dybkjaer L, Granlie K, et al. 1982. A longitudinal study of serum TSH and total and free iodothyronines during normal pregnancy. *Acta Endocrinol.* 101:531-7.

42. Pedersen KM, Laurberg P, Iversen E, et al. 1993. Amelioration of some pregnancy associated variation in thyroid function by iodine supplementation. *J Clin Endocrinol Metab.* 77:1078-83.

43. Nohr SB, Jorgensen A, Pedersen KM, et al. 2000. Postpartum thyroid dysfunction in pregnant TPOAb-positive women living in an area with mild to moderate iodine deficiency- is iodine supplementation safe? *J Clin Endocrinol Metab.* 85:3191-8.

44. Panesar NS, Li CY, and Rogers MS. 2001. Reference intervals for thyroid hormones in pregnant Chinese women. *Ann Clin Biochem.* 38:329-32.

45. Nissim M, Giorda G, Ballabio M, et al. 1991. Maternal thyroid function in early and late pregnancy. *Horm Res.* 36:196-202.

46. Jordan V, Grebe SK, Cooke RR, et al. 1999. Acidic isoforms of chorionic gonadotrophin in European and Samoan women are associated with hyperemesis gravidarum and may be thyrotrophic. *Clin Endocrinol.* 50:619-27.
47. Talbot JA, Lambert A, Anobile CJ, et al. 2001. The nature of human chorionic gonadotropin glycoforms in gestational thyrotoxicosis. *Clin Endocrinol.* 55:33-9.
48. Goodwin TM, Montoro M, Mestman JH, et al. 1992. The role of chorionic gonadotropin in transient hyperthyroidism of hyperemesis gravidarum. *J Clin Endocrinol Metab.* 75:1333.
49. Hershman JM. 1999. Human chorionic gonadotropin and the thyroid: hyperemesis gravidarum and trophoblastic tumors. *Thyroid.* 9:653-7.
50. McElduff A. 1999. Measurement of free thyroxine (T4) in pregnancy. *Aust NZ J Obst Gynecol.* 39:158-61.
51. Christofides, N., Wilkinson E, Stoddart M, et al. 1999. Assessment of serum thyroxine binding capacity-dependent biases in free thyroxine assays. *Clin Chem.* 45:520-5.
52. Wang R, Nelson JC, Weiss RM, et al. 2000. Accuracy of free thyroxine measurements across natural ranges of thyroxine binding to serum proteins. *Thyroid.* 10:31-9.
53. Sapin R, Gasser F, d'Herbomez M, et al. 1996. Evaluation du bilan hormonal thyroïdien sure Elecsys. *Immunoanal Biol Spec.* 11:388-94.
54. Roti E, Gardini E, Minelli R, et al. 1991. Thyroid function evaluation by different commercially available free thyroid hormone measurement kits in term pregnant women and their newborns. *J Endocrinol Invest.* 14:1-9.
55. Sapin R, Gasser F, Schlienger JL, et al. 1999. Evaluation clinique du bilan hormonal thyroïdien sur Vitros ECI. *Immunoanal Biol Spec* 14 (193-9).
56. Gasser F, Schlienger JL, Doffoel S, et al. 2000. Evaluation du bilan hormonal thyroïdien sur ADVIA: Centaur. *Immunoanal Biol Spec.* 15:436-43.
57. Stockigt JR. 2001. Free thyroid hormone measurement: a critical appraisal. *Endocrinol Metab Clin N Am.* 30:265-89.
58. Mandel SJ, Larsen PR, Seely EW, et al. 1990. Increased need for thyroxine during pregnancy in women with primary hypothyroidism. *NEJM.* 323:91-6.
59. Burrow, G., Fisher DA, and Larsen PR. 1994. Maternal and fetal thyroid function. *N Engl J Med.* 331:1072.
60. Pop VJ, De Vries E, Van Baar AL, et al. 1995. Maternal thyroid peroxidase antibodies during pregnancy: a marker of impaired child development? *J Clin Endocrinol Metab.* 80:3561-6.
61. Haddow JE, Palomaki GE, Allan WC, K. et al. 1999. Maternal thyroid deficiency during pregnancy and subsequent neuropsychological development of the child. *NEJM.* 341:549-55.
62. Pop VJ, Kuijpers JL, van Baar AL, et al. 1999. Low maternal free thyroxine concentrations during early pregnancy are associated with impaired psychomotor development in infancy. *Clin Endocrinol.* 50:147-8.
63. Allan WC, Haddow JE, Palomaki GE, et al. 2000. Maternal thyroid deficiency and pregnancy complications: implications for population screening. *J Med Screening.* 7:127-30.
64. Radetti G, Gentili L, Paganini C, et al. 2000. Psychomotor and audiological assessment of infants born to mothers with subclinical thyroid dysfunction in early pregnancy. *Minerva Pediatr.* 52 (691-8).
65. Feldt-Rasmussen U, Petersen PH, Blaabjerg O, et al. 1980. Long-term variability in serum thyroglobulin and thyroid related hormones in healthy subjects. *Acta Endocrinol (Copenh).* 95:328-34.
66. Browning MCK, Ford RP, Callaghan SJ, and et al. 1986. Intra- and interindividual biological variation of five analytes used in assessing thyroid function: implications for necessary standards of performance and the interpretation of results. *Clin Chem.* 32:962.
67. Lum SM, and Nicoloff JT. 1984. Peripheral tissue mechanism for maintenance of serum triiodothyronine values in a thyroxine-deficient state in man. *J Clin Invest.* 73:570-5.
68. Weeke J, and Gundersen HJ. 1978. Circadian and 30 minute variations in serum TSH and thyroid hormones in normal subjects. *Acta Endocrinol.* 89:659-72.
69. Brabant, G., K. Prank, C. Hoang-Vu, et al. 1991. Hypothalamic regulation of pulsatile thyrotropin secretion. *J Clin Endocrinol Metab.* 72:145-50.



70. Surks MI, and Sievert R. 1995. Drugs and thyroid function. *NEJM*. 333:1688-94.
71. Kailajarvi M, Takala T, Gronroos P, et al 2000. Reminders of drug effects on laboratory test results. *Clin Chem*. 46:1395-1400.
72. Brabant A, Brabant G, Schuermeyer T, et al. 1989. The role of glucocorticoids in the regulation of thyrotropin. *Acta Endocrinol*. 121:95-100.
73. Samuels MH, and McDaniel PA. 1997. Thyrotropin levels during hydrocortisone infusions that mimic fasting-induced cortisol elevations: a clinical research center study. *J Clin Endocrinol Metab*. 82:3700-4.
74. Kaptein EM, Spencer CA, Kamiel MB, et al. 1980. Prolonged dopamine administration and thyroid hormone economy in normal and critically ill subjects. *J Clin Endocrinol Metab*. 51:387-93.
75. Geffner DL, and Hershman JM. 1992. Beta-adrenergic blockade for the treatment of hyperthyroidism. *Am J Med*. 93:61-8.
76. Meurisse M, Gollogly MM, Degauque C, et al. 2000. Iatrogenic thyrotoxicosis: causal circumstances, pathophysiology, and principles of treatment- review of the literature. *World J Surg*. 24:1377-85.
77. Martino E, Aghini-Lombardi F, Mariotti S, et al. 1987. Amiodarone iodine-induced hypothyroidism risk factors and follow-up in 28 cases. *Clin Endocrinol*. 26:227.
78. Caron P. 1995. Effect of amiodarone on thyroid function. *Press Med*. 24:1747-51.
79. Harjai KJ, and Licata AA. 1997. Effects of amiodarone on thyroid function. *Ann Intern Med*. 126:63.
80. Daniels GH. 2001. Amiodarone-induced thyrotoxicosis. *J Clin Endocrinol Metab*. 86:3-8.
81. Martino E, Bartalena L, Bogazzi F, et al. 2001. The effects of Amiodarone on the Thyroid. *Endoc Rev*. 22:240-54.
82. Lazarus JH. 1998. The effects of lithium therapy on thyroid and thyrotropin-releasing hormone. *Thyroid*. 8:909-13.
83. Kusalic M, and Engelsmann F. 1999. Effect of lithium maintenance therapy on thyroid and parathyroid function. *J Psych Neurosci*. 24:227-33.
84. Oakley PW, Dawson AH, and Whyte IM. 2000. Lithium: thyroid effects and altered renal handling. *Clin Toxicol*. 38:333-7.
85. Stockigt JR, Lim CF, Barlow JW, et al. 1984. High concentrations of furosemide inhibit plasma binding of thyroxine. *J Clin Endocrinol Metab*. 59:62.
86. Surks MI, and Defesi CR. 1996. Normal free thyroxine concentrations in patients treated with phenytoin or carbamazepine: a paradox resolved. *JAMA*. 275:1495-.
87. Mendel CM, Frost PH, Kunitake ST, et al. 1987. Mechanism of the heparin-induced increase in the concentration of free thyroxine in plasma. *J Clin Endocrinol Metab*. 65:1259-.
88. Iitaka M, Kawasaki S, Sakurai S, et al 1998. Serum substances that interfere with thyroid hormone assays in patients with chronic renal failure. *Clin Endocrinol*. 48:739-46.
89. Bowie LJ, Kirkpatrick PB, and Dohnal JC. 1987. Thyroid function testing with the TDx: Interference from endogenous fluorophore. *Clin Chem*. 33:1467.
90. DeGroot LJ, and Mayor G. 1992. Admission screening by thyroid function tests in an acute general care teaching hospital. *Amer J Med*. 93:558-64.
91. Kaptein EM. 1996. Thyroid hormone metabolism and thyroid diseases in chronic renal failure. *Endocrinol Rev*. 17:45-63.
92. Van den Berghe G, De Zegher F, and Bouillon R. 1998. Acute and prolonged critical illness as different neuroendocrine paradigms. *J Clin Endocrinol Metab*. 83:1827-34.
93. Van den Berhe G. 2000. Novel insights into the neuroendocrinology of critical illness. *Eur J Endocrinol*. 143:1-13.
94. Wartofsky L. 1994. The low T3 or "sick euthyroid syndrome": update 1994. *Endocrinol Rev*. 3:248.
95. Spencer CA, Eigen A, Duda M, et al. 1987. Sensitive TSH tests - specificity limitations for screening for thyroid disease in hospitalized patients. *Clin Chem*. 33 :1391-1396
96. Stockigt JR. 1996. Guidelines for diagnosis and monitoring of thyroid disease: nonthyroidal illness. *Clin Chem*. 42:188.
97. Nelson JC, and Weiss RM. 1985. The effects of serum dilution on free thyroxine (T4)

- concentration in the low T4 syndrome of nonthyroidal illness. *J Clin Endocrinol Metab.* 61:239-46.
98. Chopra IJ, Huang T-S, Beredo A, et al. 1986. Serum thyroid hormone binding inhibitor in non thyroidal illnesses. *Metabolism.* 35:152-.
  99. Iitaka M, Kawasaki S, Sakurai S, et al 1998. Serum substances that interfere with thyroid hormone assays in patients with chronic renal failure. *Clin Endocrinol.* 48:739-46.
  100. Wang R, Nelson JC, and Wilcox RB. 1998. Salsalate administration - a potential pharmacological model of the sick euthyroid syndrome. *J Clin Endocrinol Metabl.* 83:3095-.
  101. Sapin R, Schliener JL, Kaltenbach G, et al. 1995. Determination of free triiodothyronine by six different methods in patients with non-thyroidal illness and in patients treated with amiodarone. *Ann Clin Biochem.* 32:314-24.
  102. Docter R, van Toor H, Krenning EP, et al. 1993. Free thyroxine assessed with three assays in sera of patients with nonthyroidal illness and of subjects with abnormal concentrations of thyroxine-binding proteins. *Clin Chem.* 39:1668-74.
  103. Wilcox RB, Nelson JC, and Tomei RT. 1994. Heterogeneity in affinities of serum proteins for thyroxine among patients with non-thyroidal illness as indicated by the serum free thyroxine response to serum dilution. *Eur J Endocrinol.* 131:9-13.
  104. Liewendahl K, Tikanoja S, Mahonen H, et al. 1987. Concentrations of iodothyronines in serum of patients with chronic renal failure and other nonthyroidal illnesses: role of free fatty acids. *Clin Chem.* 33:1382-6.
  105. Sapin R, Schlienger J-L, Gasser F, et al. 2000. Intermethod discordant free thyroxine measurements in bone marrow-transplanted patients. *Clin Chem.* 46:418-.
  106. Chopra IJ. 1998. Simultaneous measurement of free thyroxine and free 3,5,3'-triiodothyronine in undiluted serum by direct equilibrium dialysis/radioimmunoassay: evidence that free triiodothyronine and free thyroxine are normal in many patients with the low triiodothyronine syndrome. *Thyroid.* 8:249-57.
  107. Hamblin PS, Dyer SA, Mohr VS, et al. 1986. Relationship between thyrotropin and thyroxine changes during recovery from severe hypothyroxinemia of critical illness. *J Clin Endocrinol Metab.* 62:717-22.
  108. Brent GA, and Hershman JM. 1986. Thyroxine therapy in patients with severe nonthyroidal illnesses and low serum thyroxine concentrations. *J Clin Endocrinol Metab.* 63:1.
  109. De Groot LJ. 1999. Dangerous dogmas in medicine: the nonthyroidal illness syndrome. *J Clin Endocrinol Metab.* 84:151-64.
  110. Burman KD, and Wartofsky L. 2001. Thyroid function in the intensive care unit setting. *Crit Care Clin.* 17:43-57.
  111. Behrend EN, Kemppainen RJ, and Young DW. 1998. Effect of storage conditions on cortisol, total thyroxine, and free thyroxine concentrations in serum and plasma of dogs. *J Am Vet Med Assoc.* 212:1564-8.
  112. Oddie TH, Klein AH, Foley TP, et al. 1979. Variation in values for iodothyronine hormones, thyrotropin and thyroxine binding globulin in normal umbilical-cord serum with season and duration of storage. *Clin Chem.* 25:1251-3.
  113. Koliakos G, Gaitatzi M, and Grammaticos P. 1999. Stability of serum TSH concentration after non refrigerated storage. *Minerva Endocrinol.* 24:113-5.
  114. Waite KV, Maberly GF, and Eastman CJ. 1987. Storage conditions and stability of thyrotropin and thyroid hormones on filter paper. *Clin Chem.* 33:853-5.
  115. Laurberg P. 1993. Persistent problems with the specificity of immunometric TSH assays. *Thyroid.* 3:279-83.
  116. Frost SJ, Hine KR, Firth GB, et al. Falsely lowered FT4 and raised TSH concentrations in a patient with hyperthyroidism and human anti-mouse monoclonal antibodies. *Ann Clin Biochem* 35 (317-20).
  117. Sapin R, and Simon C. 2001. False hyperprolactinemia corrected by the use of heterophilic antibody-blocking agent. *Clin Chem.* 47:2184-5.
  118. Browning MC. 1989. Analytical goals for quantities used to assess thyrometabolic status. *Ann Clin Biochem.* 26:1-12.
  119. Fraser CG, Petersen PH, Ricos C, et al. 1992. Proposed quality specifications for the

- imprecision and inaccuracy of analytical systems for clinical chemistry. *Eur J Clin Chem Biochem.* 30:311.
120. Rodbard, D. 1978. Statistical estimation of the minimal detectable concentration ("sensitivity") for radioligand assays. *Anal Biochem.* 90:1-12.
  121. Ekins R, and Edwards P. 1997. On the meaning of "sensitivity". *Clin Chem.* 43:1824-31.
  122. Fuentes-Arderiu X, and Fraser CG. 1991. Analytical goals for interference. *Ann Clin Biochem.* 28:393-5.
  123. Petersen PH, Fraser CG, Westgard JO, et al. 1992. Analytical goal-setting for monitoring patients when two analytical methods are used. *Clin Chem.* 38:2256-60.
  124. Fraser CG, and Petersen PH. 1993. Desirable standards for laboratory tests if they are to fulfill medical needs. *Clin Chem.* 39:1453-5.
  125. Stockl D, Baadenhuijsen H, Fraser CG, et al. 1995. Desirable routine analytical goals for quantities assayed in serum. Discussion paper from the members of the external quality assessment (EQA) Working Group A on analytical goals in laboratory medicine. *Eur J Clin Chem Clin Biochem.* 33:157-69.
  126. Plebani M, Giacomini A, Beghi L, et al. 1996. Serum tumor markers in monitoring patients: interpretation of results using analytical and biological variation. *Anticancer Res.* 16:2249-52.
  127. Browning MC, Bennet WM, Kirkaldy AJ, et al. 1988. Intra-individual variation of thyroxine, triiodothyronine, and thyrotropin in treated hypothyroid patients: implications for monitoring replacement therapy. *Clin Chem.* 34:696-9.
  128. Harris EK. 1979. Statistical principles underlying analytic goal-setting in clinical chemistry. *Am J Clin Pathol.* 72:374-82.
  129. Evans SE, Burr WA, and Hogan TC. 1977. A reassessment of 8-anilino-1-naphthalene sulphonic acid as a thyroxine binding inhibitor in the radioimmunoassay of thyroxine. *Ann Clin Biochem.* 14:330-4.
  130. Karapitta CD, Sotiroidis TG, Papadimitriou A, et al. 2001. Homogeneous enzyme immunoassay for triiodothyronine in serum. *Clin Chem.* 47:569-74.
  131. De Brabandere VI, Hou P, Stockl D, et al. 1998. Isotope dilution-liquid chromatography/electrospray ionization-tandem mass spectrometry for the determination of serum thyroxine as a potential reference method. *Rapid Commun Mass Spectrom.* 12:1099-103.
  132. Thienpont LM, Fierens C, De Leenheer AP, et al. 1999. Isotope dilution-gas chromatography/mass spectrometry and liquid chromatography/electro-spray ionization-tandem mass spectrometry for the determination of triiodo-L-thyronine in serum. *Rapid Commun Mass Spectrom.* 13:1924-31.
  133. Sarne DH, Refetoff S, Nelson JC, et al. 1989. A new inherited abnormality of thyroxine-binding globulin (TBG-San Diego) with decreased affinity for thyroxine and triiodothyronine. *J Clin Endocrinol Metab.* 68:114-9.
  134. Schussler GC. 2000. The thyroxine-binding proteins. *Thyroid.* 10:141-9.
  135. Beck-Peccoz P, Romelli PB, Cattaneo MG, and e. al. 1984. Evaluation of free T4 methods in the presence of iodothyronine autoantibodies. *J Clin Endocrinol Metab.* 58:736-.
  136. Sakata S, Nakamura S, and Miura K. 1985. Autoantibodies against thyroid hormones or iodothyronine. *Ann Intern Med.* 103:579-.
  137. Despres N, and Grant AM. 1998. Antibody interference in thyroid assays: a potential for clinical misinformation. *Clin Chem.* 44:440-.
  138. Hay ID, Bayer MF, Kaplan MM, et al. 1991. American Thyroid Association Assessment of Current Free Thyroid Hormone and Thyrotropin Measurements and Guidelines for Future Clinical Assays. *Clin Chem.* 37:2002 - 2008.
  139. Ekins R. 1990. Measurement of free hormones in blood. *Endocrinol Rev.* 11:5-.
  140. Ekins R. 1998. The science of free hormone measurement. *Proc UK NEQAS Meeting.* 3:35-59.
  141. Nelson JC, Wilcox BR, and Pandian MR. 1992. Dependence of free thyroxine estimates obtained with equilibrium tracer dialysis on the concentration of thyroxine-binding globulin. *Clin Chem.* 38:1294-1300.
  142. Ekins R. 1992. The free hormone hypothesis and measurement of free hormones. *Clin Chem.* 38:1289-.
  143. Ekins RP. 1998. Ligand assays: from electrophoresis to miniaturized microarrays. *Clin*

Chem. 44:2015-30.

144. Ekins R. 1993. Analytic measurements of free thyroxine. *Clin Lab Med.* 13:599-630.
145. Nusynowitz, M. L. 1975. Free-thyroxine index. *JAMA.* 232:1050.
146. Larsen PR, Alexander NM, Chopra IJ, et al. 1987. Revised nomenclature for tests of thyroid hormones and thyroid-related proteins in serum. *J Clin Endocrinol Metab.* 64:1089.
147. Burr WA, Evans SE, Lee J, et al. 1979. The ratio of thyroxine to thyroxine-binding globulin measurement in the evaluation of thyroid function. *Clin Endocrinol.* 11:333-42.
148. Attwood EC, and Atkin GE. 1982. The T4: TBG ratio: a re-evaluation with particular reference to low and high serum TBG levels. *Ann Clin Biochem.* 19:101-3.
149. Szpunar WE, Stoffer SS, and DiGiulio W. 1987. Clinical evaluation of a thyroxine binding globulin assay in calculating a free thyroxine index in normal, thyroid disease and sick euthyroid patients. *J Nucl Med.* 28:1341-3.
150. Nelson JC, and Tomei RT. 1989. Dependence of the thyroxin/thyroxin-binding globulin (TBG) ratio and the free thyroxin index on TBG concentrations. *Clin Chem.* 35:541-4.
151. Sterling K, and Brenner MA. 1962. Free thyroxine in human serum: Simplified measurement with the aid of magnesium precipitation. *J Clin Invest.* 45:153-?
152. Schulssler GC, and Plager JE. 1967. Effect of preliminary purification of <sup>131</sup>-Thyroxine on the determination of free thyroxine in serum. *J Clin Endocrinol.* 27:242-50.
153. Nelson, J. C., and R. T. Tomei. 1988. A direct equilibrium dialysis/radioimmunoassay method for the measurement of free thyroxin in undiluted serum. *Clin Chem.* 34:1737-44.
154. Tikanoja S. 1990. Ultrafiltration devices tested for use in a free thyroxine assay validated by comparison with equilibrium dialysis. *Scand J Clin Lab Invest.* 50:663-9.
155. Ellis SM, and Ekins R. 1973. Direct measurement by radioimmunoassay of the free thyroid hormone concentrations in serum. *Acta Endocrinol (Suppl).* 177:106-.
156. Weeke J, and Orskov H. 1975. Ultrasensitive radioimmunoassay for direct determination of free triiodothyronine concentration in serum. *Scand J Clin Lab Invest.* 35:237-44.
157. Surks MI, Hupart KH, Chao P, et al. 1988. Normal free thyroxine in critical nonthyroidal illness measured by ultrafiltration of undiluted serum and equilibrium dialysis. *J Clin Endocrinol Metab.* 67:1031-.
158. Holm SS, Andreasen L, Hansen SH, et al. 2002. Influence of adsorption and deproteination on potential free thyroxine reference methods. *Clin Chem.* 48:108-114.
159. Jaume JC, Mendel CM, Frost PH, et al. 1996. Extermely low doses of heparin release lipase activity into the plasma and can thereby cause artifactual elevations in the serum-free thyroxine concentrations as measured by equilibrium dialysis. *Thyroid.* 6:79-83.
160. Stevenson HP, Pooler G, Archbold R, et al. 1998. Misleading serum free thyroxine results during low molecular weight heparin treatment. *Clin Chem.* 44:1002-7.
161. Laji K, Rhidha B, John R, Lazarus J, et al. 2001. Artifactual elevations in serum free thyroxine and triiodothyronine concentrations during heparin therapy. *QJM.* 94:471-3.
162. Czako, G., M. H. Zweig, C. Benson, et al. 1987. On the albumin-dependence of measurements of free thyroxin. II Patients with non-thyroidal illness. *Clin Chem.* 33:87-92.
163. Csako G, Zweig MH, Glickman J, et al. 1989. Direct and indirect techniques for free thyroxin compared in patients with nonthyroidal illness. I. Effect of free fatty acids. *Clin Chem.* 35:102-9.
164. Csako G, Zwiig MH, Glickman J, et al. 1989. Direct and indirect techniques for free thyroxin compared in patients with nonthyroidal illness. II. Effect of prealbumin, albumin and thyroxin-binding globulin. *Clin Chem.* 35:1655-62.
165. Ross HA, and Benraad TJ. 1992. Is free thyroxine accurately measurable at room temperature? *Clin Chem.* 38:880-6.
166. Van der Sluijs Veer G, Vermes I, et al. 1992. Temperature effects on Free Thyroxine Measurement: Analytical and Clinical Consequences. *Clin Chem.* 38:1327-31.
167. Fisher DA. 1997. The hypothyroxinemia of prematurity. *J Clin Endocrinol Metab.* 82:1701-.
168. Stockigt JR, Stevens V, White EL, et al. 1983. Unbound analog radioimmunoassays for free thyroxin measure the albumin-bound hormone fraction. *Clin Chem.* 29:1408-.
169. Aravelo G. 1991. Prevalence of familial dysalbuminemic hyperthyroxinemia in serum

samples received for thyroid testing. *Clin Chem.* 37:1430-1.

170. Inada M, and Sterling K. 1967. Thyroxine transport in thyrotoxicosis and hypothyroidism. *J Clin Invest.* 46:1442-.

171. Lueprasitsakul W, Alex S, Fang SL, et al. 1990. Flavonoid administration immediately displaces thyroxine (T4) from serum transthyretin, increases serum free T4 and decreases serum thyrotropin in the rat. *Endocrinol.* 126:2890-.

172. Wang R, Nelson JC, and Wilcox RB. 1999. Salsalate and salicylate binding to and their displacement of thyroxine from thyroxine-binding globulin, transthyrin, and albumin. *Thyroid.* 9:359-64.

173. Lim C-F, Bai Y, Topliss DJ, et al. 1988. Drug and fatty acid effects on serum thyroid hormone binding. *J Clin Endocrinol Metab.* 67:682-.

174. Munro SL, Lim C-F, Hall JG, et al. 1989. Drug competition for thyroxine binding to transthyretin (prealbumin): comparison with effects on thyroxine-binding globulin. *J Clin Endocrinol Metab.* 68:1141-.

175. Stockigt JR, Lim C-F, Barlow JW, et al. 1997. Thyroid hormone transport. Springer Verlag, Heidelberg. 119 pp.

176. Ross HA. 1978. A dialysis method for the measurement of free iodothyronine and steroid hormones in blood. *Experientia.* 34:538-9.

177. Norden AGM, Jackson RA, Norden LE, et al. 1997. Misleading results for immunoassays of serum free thyroxine in the presence of rheumatoid factor. *Clin Chem.* 43:957-62.

178. Law LK, Cheung CK, and Swaminathan R. 1988. Falsely high thyroxine results by fluorescence polarization in sera with high background fluorescence. *Clin Chem.* 34:1918-.

179. Kricka LJ. 2000. Interferences in Immunoassay - still a threat. *Clin Chem.* 46 (1037-8).

180. McBride JH, Rodgerson DO, and Allin RE. 1987. Choriogonadotrophin interference in a sensitive assay for Thyrotropin. *Clin Chem.* 33:1303-4.

181. Ritter D, Stott R, Grant N, and Nahm MH. 1993. Endogenous antibodies that interfere with Thyroxine fluorescence polarization assay but not with radioimmunoassay or EMIT. *Clin Chem.* 39:508-11.

182. Levinson SS. 1992. The nature of heterophilic antibodies and their role in immunoassay interference. *J Clin Immunoassay.* 15:108-15.

183. Covinsky M, Laterza O, Pfeifer JD, et al. 2000. Lamda antibody to *Esherichia coli* produces false-positive results in multiple immunometric assays. *Clin Chem.* 46:1157-61.

184. Martel J, Despres N, Ahnadi CE, et al. 2000. Comparative multicentre study of a panel of thyroid tests using different automated immunoassay platforms and specimens at high risk of antibody interference. *Clin Chem Lab Med.* 38:785-93.

185. Howanitz PJ, Howanitz JH, Lamberson HV, et al 1982. Incidence and mechanism of spurious increases in serum Thyrotropin. *Clin Chem.* 28:427-31.

186. Boscato, L. M., and M. C. Stuart. 1988. Heterophilic antibodies: a problem for all immunoassays. *Clin Chem.* 34:27-33.

187. Kricka LJ. 1999. Human anti-animal antibody interference in immunological assays. *Clin Chem.* 45:942-56.

188. DeGroot LJ, Larsen PR, Refetoff S, et al. 1984. *The Thyroid and its Diseases.* Fifth Edition,. John Wiley & Sons, Inc., New York:266-7.

189. Beck-Peccoz P, Amr S, Menezes-Ferreira NM, et al. 1985. Decreased receptor binding of biologically inactive thyrotropin in central hypothyroidism: effect of treatment with thyrotropin-releasing hormone. *N Engl J Med.* 312:1085.

190. Beck-Peccoz P, and Persani L. 1994. Variable biological activity of thyroid-stimulating hormone. *Eur J Endocrinol.* 131:331.

191. Persani L, Ferretti E, Borgato S, et al. 2000. Circulating thyrotropin bioactivity in sporadic central hypothyroidism. *J Clin Endocrinol Metab.* 85:3631-5.

192. Rafferty B, and Gaines Das R. 1999. Comparison of pituitary and recombinant human thyroid-stimulating hormone (rhTSH) in a multicenter collaborative study: establishment of the first World Health Organization reference reagent for rhTSH. *Clin Chem.* 45:2207-15.

193. Horimoto M, Nishikawa M, Ishihara T, et al. 1995. Bioactivity of thyrotropin (TSH) in patients with central hypothyroidism: comparison between in vivo 3,5,3'-triiodothyronine response to TSH

and in vitro bioactivity of TSH. *J Clin Endocrinol Metab.* 80:1124-8.

194. Persani L, Borgato S, Romoli R, et al. 1998. Changes in the degree of sialylation of carbohydrate chains modify the biological properties of circulating thyrotropin isoforms in various physiological and pathological states. *J Clin Endocrinol Metab.* 83:2486-92.

195. Gershengorn MC, and Weintraub BD. 1975. Thyrotropin-induced hyperthyroidism caused by selective pituitary resistance to thyroid hormone. A new syndrome of "inappropriate secretion of TSH". *J Clin Invest.* 56:633-42.

196. Faglia G, Beck-Peccoz P, Piscitelli G, et al. 1987. Inappropriate secretion of thyrotropin by the pituitary. *Horm Res.* 26:79-99.

197. Spencer CA, Takeuchi M, and Kazarosyan M. 1996. Current status and performance goals for serum thyrotropin (TSH) assays. *Clinical Chemistry.* 42 (1):141-145.

198. Spencer CA, Schwarzbein D, Guttler RB, et al. 1993. TRH stimulation test responses employing third and fourth generation TSH assays. *J Clin Endocrinol Metab.* 76:494-498.

199. Spencer CA, Takeuchi M, and Kazarosyan M. 1996. Current Status and Performance Goals for Serum Thyroglobulin Assays. *Clin Chem.* 42:164-73.

200. Vogeser M, Weigand M, Fraunberger P, et al. 2000. Evaluation of the ADVIA Centaur TSH-3 assay. *Clin Chem Lab Med.* 38:331-4.

201. Spencer CA, Takeuchi M, Kazarosyan M, et al. 1995. Interlaboratory/intermethod differences in functional sensitivity of immunometric assays for thyrotropin (TSH): impact on reliability of measurement of subnormal concentration. *Clin Chem.* 41:367-74.

202. Tunbridge WM, Evered DC, Hall R, et al 1977. The spectrum of thyroid disease in a community: the Wickham survey. *Clin Endocrinol.* 7:481-93.

203. Michalopoulou G, Alevizaki M, Piperigos G, et al. 1998. *Eur J Endocrinol.* 138 (141-5).

204. Hershman JM, and Pittman JA. 1971. Utility of the radioimmunoassay of serum thyrotropin in man. *Ann Intern Med.* 74:481-90.

205. Becker DV, Bigos ST, Gaitan E, et al 1993. Optimal use of blood tests for assessment of thyroid function. *JAMA.* 269 (21):2736.

206. Parle JV, Franklyn JA, Cross KW, et al. 1991. Prevalence and follow-up of abnormal thyrotropin (TSH) concentrations in the elderly in the United Kingdom. *Clin Endocrinol.* 34:77-83.

207. Danese D, Sciacchitano S, Farsetti A, et al. 1998. Diagnostic accuracy of conventional versus sonography-guided fine-needle aspiration biopsy of thyroid nodules. *Thyroid.* 8:15-21.

208. McDermott MT, and Ridgway EC. 2001. Subclinical hypothyroidism is mild thyroid failure and should be treated. *J Clin Endocrinol Metab.* 86:4585-90.

209. Chu JW, and Crapo LM. 2001. The treatment of subclinical hypothyroidism is seldom necessary. *J Clin Endocrinol Metab.* 86:4591-9.

210. Berghout A, Wiersinga WM, Smits NJ, et al. 1990. Interrelationships between age, thyroid volume, thyroid nodularity and thyroid function in patients with sporadic nontoxic goiter. *Am J Med.* 89:602-8.

211. Pearce CJ, and Himsworth RL. 1984. Total and free thyroid hormone concentrations in patients receiving maintenance replacement treatment with thyroxine. *Br Med J.* 288 (693-).

212. Fish LH, Schwarz HL, Cavanaugh MD, et al. 1987. Replacement dose, metabolism and bioavailability of levothyroxine in the treatment of hypothyroidism. *N Engl J Med.* 316:764-.

213. Arafah BM. 2001. Estrogen therapy may necessitate an increase in thyroxine dose for hypothyroidism. *NEJM.* 344:1743-9 &1784-5.

214. Scheithauer BW, Kovacs K, Randall RV, et al. 1985. Pituitary gland in hypothyroidism. Histologic and immunocytologic study. *Arch Pathol Lab Med.* 109 (499-504).

215. Ain KB, Pucino F, Shiver TM, et al. 1993. Thyroid hormone levels affected by time of blood sampling in thyroxine-treated patients. *Thyroid.* 3:81.

216. Chorazy PA, Himelhoch S, Hopwood NJ, et al. 1995. Persistent hypothyroidism in an infant receiving a soy formula: case report and review of the literature. *Pediatrics.* 96:148-50.

217. Dulgeroff AJ, and Hershman JM. 1994. Medical therapy for differentiated thyroid carcinoma. *Endocrinol Rev.* 15:500-.

218. Pujol P, Daures JP, Nsakala N, et al. 1996. Degree of thyrotropin suppression as a prognostic determinant in differentiated thyroid cancer. *J Clin Endocrinol Metab.* 81:4318-.

219. Cooper DS, Specker B, Ho M, et al. 1999. Thyrotropin suppression and disease progression in patients with differentiated thyroid cancer: results from the National thyroid Cancer Treatment Cooperative Registry. *Thyroid*. 8:737-.
220. Hurley DL, and Gharib H. 1996. Evaluation and management of multinodular goiter. *Otolaryngol Clin North Am*. 29:527-40.
221. Bayer MF, Macoviak JA, and McDougall IR. 1987. Diagnostic performance of sensitive measurements of serum thyrotropin during severe nonthyroidal illness: Their role in the diagnosis of hyperthyroidism. *Clin Chem*. 33:2178-84.
222. Lum SM, Kaptein EM, and Nicoloff JT. 1983. Influence of nonthyroidal illnesses on serum thyroid hormone indices in hyperthyroidism. *West J Med*. 138:670-5.
223. Oliveira JH, Persani L, Beck-Peccoz P, et al. 2001. Investigating the paradox of hypothyroidism and increased serum thyrotropin (TSH) levels in Sheehan's syndrome: characterization of TSH carbohydrate content and bioactivity. *J Clin Endocrinol Metab*. 86:1694-9.
224. Faglia G, Bitensky L, Pinchera A, et al. 1979. Thyrotropin secretion in patient with central hypothyroidism: Evidence for reduced biological activity of immunoreactive thyrotropin. *J Clin Endocrinol Metab*. 48:989-.
225. Faglia G, Beck-Peccoz P, Ballabio M, et al. 1983. Excess of beta-subunit of thyrotropin (TSH) in patients with idiopathic central hypothyroidism due to the secretion of TSH with reduced biological activity. *J Clin Endocrinol Metab*. 56:908-14.
226. Faglia G. 1998. The clinical impact of the thyrotropin-releasing hormone test. *Thyroid*. 8:903-8.
227. Trejbal D, Sulla I, Trejbalova L, et al. 1994. Central hypothyroidism - various types of TSH responses to TRH stimulation. *Endocr Regul*. 28:35-40.
228. Faglia G, Ferrari C, Paracchi A, et al. 1975. Triiodothyronine response to thyrotropin releasing hormone in patients with hypothalamic-pituitary disorders. *Clin Endocrinol*. 4:585-90.
229. Horimoto M, Nishikawa M, Ishihara T, et al. 1995. Bioactivity of thyrotropin (TSH) in patients with central hypothyroidism: comparison between in vivo 3,5,3' triiodothyronine response to TSH and in vitro bioactivity of TSH. *J Clin Endocrinol Metab*. 80:1124-8.
230. Beck-Peccoz P, Brucker-Davis F, Persani L, et al. 1996. Thyrotropin-secreting pituitary tumors. *Endocrine Rev*. 17:610-38.
231. Brucker-Davis F, Oldfield EH, Skarulis MC, et al. 1999. Thyrotropin-secreting pituitary tumors: diagnostic criteria, thyroid hormone sensitivity, and treatment outcome in 25 patients followed at the National Institutes of Health. *J Clin Endocrinol Metab* 76 (1089-94).
232. Freda PU, and Wardlaw SL. 1999. Clinical review 110: Diagnosis and treatment of pituitary tumors. *J Clin Endocrinol Metab*. 84:3859-66.
233. Refetoff S, Weiss RE, and Usala SJ. 1993. The syndromes of resistance to thyroid hormone. *Endocr Rev*. 14:348.
234. Weiss RE, Hayashi Y, Nagaya T, et al. 1996. Dominant inheritance of resistance to thyroid hormone not linked to defects in the thyroid hormone receptors alpha or beta genes may be due to a defective co-factor. *J Clin Endocrinol Metab*. 81:4196-.
235. Snyder D, Sesser D, Skeels M, et al. 1997. Thyroid disorders in newborn infants with elevated screening T4. *Thyroid*. 7 (Suppl 1):S1-29 (abst).
236. Refetoff S. 2000. Resistance to Thyroid Hormone. In *The Thyroid*. Braverman LE and Utiger RD, editor. Lippincott Williams & Wilkins, Philadelphia. 1028-43.
237. Beck-Peccoz P, and Chatterjee VKK. 1994. The variable clinical phenotype in thyroid hormone resistance syndrome. *Thyroid*. 4 (225-).
238. Persani L, Asteria C, Tonacchera M, et al. 1994. Evidence for the secretion of thyrotropin with enhanced bioactivity in syndromes of thyroid hormone resistance. *J Clin Endocrinol Metab*. 78:1034-9.
239. Sarne DH, Sobieszczyk S, Ain KB, et al. 1990. Serum thyrotropin and prolactin in the syndrome of generalized resistance to thyroid hormone: responses to thyrotrophin-releasing hormone stimulation and triiodothyronine suppression. *J Clin Endocrinol Metab*. 70:1305-11.
240. Ercan-Fang S, Schwartz HL, Mariash CN, et al. 2000. Quantitative assessment of pituitary resistance to thyroid hormone from plots of the logarithm of thyrotropin versus serum free

thyroxine index. *J Clin Endocrinol Metab.* 85:2299-303.

241. Safer JD, Colan SD, Fraser LM, et al. 2001. A pituitary tumor in a patient with thyroid hormone resistance: a diagnostic dilemma. *Thyroid.* 11:281-91.

242. Marcocci C, and Chiovato L. 2000. Thyroid -directed antibodies. In *Thyroid. B. L. a. U.* RD, editor. Lippincott Williams and Wilkins, Philadelphia. 414-31.

243. Chiovato L, Bassi P, Santini F, et al. 1993. Antibodies producing complement-mediated thyroid cytotoxicity in patients with atrophic or goitrous autoimmune thyroiditis. *J Clin Endocrinol Metab.* 77:1700-5.

244. Guo J, Jaume JC, Rapoport B, et al. 1997. Recombinant thyroid peroxidase-specific Fab converted to immunoglobulin G (IgG)molecules: evidence for thyroid cell damage by IgG1, but not IgG4, autoantibodies. *J Clin Endocrinol Metab.* 82:925-31.

245. Doullay F, Ruf J, Codaccioni JL, et al. 1991. Prevalence of autoantibodies to thyroperoxidase in patients with various thyroid and autoimmune diseases. *Autoimmunity.* 9:237-44.

246. Radetti G, Persani L, Moroder W, et al. 1999. Transplacental passage of anti-thyroid autoantibodies in a pregnant woman with auto-immune thyroid disease. *Prenatal Diagnosis.* 19:468-71.

247. Heithorn R, Hauffa BP, and Reinwein D. 1999. Thyroid antibodies in children of mothers with autoimmune thyroid disorders. *Eur J Pediatr.* 158:24-8.

248. Feldt-Rasmussen U, Hoin-Madsen M, Beck K, et al. 1991. Anti-thyroid peroxidase antibodies in thyroid disorders and non thyroid autoimmune diseases. *Autoimmunity.* 9:245-51.

249. Mariotti S, Chiovato L, Franceschi C, et al. 1999. Thyroid autoimmunity and aging. *Exp Gerontol.* 33:535-41.

250. Ericsson UB, Christensen SB, and Thorell JI. 1985. A high prevalence of thyroglobulin autoantibodies in adults with and without thyroid disease as measured with a sensitive solid-phase immunosorbent radioassay. *Clin Immunol Immunopathol.* 37:154-62.

251. Feldt-Rasmussen U, Hoier-Madsen M, Rasmussen NG, et al. 1990. Anti-thyroid peroxidase antibodies during pregnancy and postpartum. Relation to postpartum thyroiditis. *Autoimmunity.* 6:211-4.

252. Premawardhana LD, Parkes AB, Ammari F, et al. 2000. Postpartum thyroiditis and long-term thyroid status: prognostic influence of Thyroid Peroxidase Antibodies and ultrasound echogenicity. *J Clin Endocrinol Metab.* 85:71-5.

253. Nohr SB, Jorgensen A, Pedersen KM, et al. 2000. Postpartum thyroid dysfunction in pregnant thyroid peroxidase antibody-positive women living in an area with mild to moderate iodine deficiency: Is iodine supplementation safe? *J Clin Endocrinol Metab.* 85:3191-8.

254. Johnston AM, and Eagles JM. 1999. Lithium-associated clinical hypothyroidism. Prevalence and risk factors. *Br. J Psychiatry.* 175:336-9.

255. Bell TM, Bansal AS, Shorthouse C, et al. 1999. Low titre autoantibodies predict autoimmune disease during interferon alpha treatment of chronic hepatitis C. *J Gastroenterol Hepatol.* 14:419-22.

256. Ward DL, and Bing-You RG. 2001. Autoimmune thyroid dysfunction induced by interfereon-alfa treatment for chronic hepatitis C: screening and monitoring recommendations. *Endoc Pract.* 7:52-8.

257. Carella C, Mazziotti G, Morisco F, et al. 2001. Long-term outcome of interferon-alpha-induced thyroid autoimmunity and prognostic influence of thyroid autoantibody pattern at the end of treatment. *J Clin Endocrinol Metab.* 86:1925-9.

258. Feldt-Rasmussen U, Schleusener H, and Carayon P. 1994. Meta-analysis evaluation of the impact of thyrotropin receptor antibodies on long term remission after medical therapy of Graves' disease. *J Clin Endocrinol Metab.* 78:98-103.

259. Estienne V, Duthoit C, Di Costanzo , et al. 1999. Multicenter study on TGPO autoantibodies prevalence in various thyroid and non-thyroid diseases: relationships with thyroglobulin and thyroperoxidase autoantibody parameters. *Eur J Endocrinol.* 141:563-9.

260. Czarnocka B, Ruf J, Ferrand M, et al. 1985. Purification of the human thyroid peroxidase and its identification as the microsomal antigen involved in autoimmune thyroid diseases. *FEBS Lett.* 190:147-52.

261. Mariotti S, Caturegli P, Piccolo P, et al. 1990. Antithyroid peroxidase autoantibodies in



thyroid diseases. *J Clin Endocrinol Metab.* 71:661-9.

262. Bussen S, Steck T, and Dietl J. 2000. Increased prevalence of thyroid antibodies in euthyroid women with a history of recurrent in-vitro fertilization failure. *Hum Reprod.* 15:545-8.

263. Phan GQ, Attia P, Steinberg SM, et al. 2001. Factors associated with response to high-dose interleukin-2 in patients with metastatic melanoma. *J Clin Oncol.* 19:3477-82.

264. Roti E, Minelli R, Giuberti T, et al. 1996. Multiple changes in thyroid function in patients with chronic active HCV hepatitis treated with recombinant interferon-alpha. *Am J Med.* 101:482-7.

265. Ruf J, Carayon P, and Lissitzky S. 1985. Various expression of a unique anti-human thyroglobulin antibody repertoire in normal state and autoimmune disease. *Eur J Immunol.* 15:268-72.

266. Ruf J, Toubert ME, Czarnocka B, et al. 1989. Relationship between immunological structure and biochemical properties of human thyroid peroxidase. *Endocrinol.* 125:1211-8.

267. Feldt-Rasmussen U, and Rasmussen A K. 1985. Serum thyroglobulin (Tg) in presence of thyroglobulin autoantibodies (TgAb). Clinical and methodological relevance of the interaction between Tg and TgAb in vivo and in vitro. *J Endocrinol Invest.* 8:571-6.

268. Spencer CA, Wang C, Fatemi S, et al. 1998. Serum Thyroglobulin Autoantibodies: Prevalence, influence on serum thyroglobulin measurement and prognostic significance in patients with differentiated thyroid carcinoma. *J Clin Endocrinol Metab.* 83:1121-7.

269. Pacini F, Mariotti S, Formica N, et al. 1988. Thyroid autoantibodies in thyroid cancer: Incidence and relationship with tumor outcome. *Acta Endocrinol.* 119:373-80.

270. Rubello D, Casara D, Girelli ME, et al. 1992. Clinical meaning of circulating antithyroglobulin antibodies in differentiated thyroid cancer: a prospective study. *J Nucl Med.* 33:1478-80.

271. Nordyke RA, Gilbert FI, Miyamoto LA, et al. 1993. The superiority of antimicrosomal over antithyroglobulin antibodies for detecting Hashimoto's thyroiditis. *Arch Intern Med.* 153:862-5.

272. Nagayama Y, and Rapoport B. 1992. The thyrotropin receptor twenty five years after its discovery: new insight following its molecular cloning. *Mol Endocrinol.* 6:145-56.

273. Di Cerbo A, Di Paola R, Menzaghi C, et al. 1999. Graves' immunoglobulins activate phospholipase A2 by recognizing specific epitopes on the thyrotropin receptor. *J Clin Endocrinol Metab.* 84:3283-92.

274. Kung AWC, Lau KS, and Kohn LD. 2001. Epitope mapping of TSH Receptor-blocking antibodies in Graves' disease that appear during pregnancy. *J Clin Endocrinol Metab.* 86:3647-53.

275. Ueta Y, Fukui H, Murakami M, et al. 1999. Development of primary hypothyroidism with the appearance of blocking-type antibody to thyrotropin receptor in Graves' disease in late pregnancy. *Thyroid.* 9:179-82.

276. Gupta MK. 2000. Thyrotropin-receptor antibodies in thyroid diseases: advances in detection techniques and clinical application. *Clin Chem Acta.* 293:1-29.

277. Kung AW, Lau KS, and Kohn LD. 2000. Characterization of thyroid-stimulating blocking antibodies that appeared during transient hypothyroidism after radioactive iodine therapy. *Thyroid.* 10:909-17.

278. Filetti S, Foti D, Costante G, et al. 1991. Recombinant human thyrotropin (TSH) receptor in a radioreceptor assay for the measurement of TSH receptor antibodies. *J Clin Endocrinol Metab.* 72:1096-101.

279. Adams DD, and Purves HD. 1956. Abnormal responses in the assay of thyrotropin. *Proc Univ Otago Med Sch.* 34:11-12.

280. Morgenthaler NG. 1998. New assay systems for thyrotropin receptor antibodies. *Current Opinion Endocrinol Diabetes.* 6:251-60.

281. Kamijo K, Nagata A, and Sato Y, 1999. Clinical significance of a sensitive assay for thyroid-stimulating antibodies in Graves' disease using polyethylene glycol at high concentration and porcine thyroid cells. *Endocrinol J.* 46:397-403.

282. Takasu N, Yamashiro K, Ochi Y, et al. 2001. TSBAb(TSH-Stimulation Blocking Antibody) and TSAAb (Thyroid Stimulating Antibody) in TSBAb-positive patients with hypothyroidism and Graves' patients with hyperthyroidism. *Horm Metab Res.* 33:232-7.

283. Costagliola S, Swillens S, Niccoli P, et al. 1992. Binding assay for thyrotropin receptor autoantibodies using the recombinant receptor protein. *J Clin Endocrinol Metab.* 75:1540-44.

284. Morgenthaler NG, Hodak K, Seissler J, et al 1999. Direct binding of thyrotropin receptor

autoantibody to in vitro translated thyrotropin receptor: a comparison to radioreceptor assay and thyroid stimulating bioassay. *Thyroid*. 9:466-75.

285. Akamizu T, Inoue D, Kosugi S, et al. 1994. Further studies of amino acids (268-304) in thyrotropin (TSH)-lutropin/chorionic gonadotropin (LH/CG) receptor chimeras: Cysteine-301 is important in TSH binding and receptor tertiary structure. *Thyroid*. 4:43-8.

286. Grasso YZ, Kim MR, Faiman C, et al. 1999. Epitope heterogeneity of thyrotropin-blocking antibodies in Graves' patients as detected with wild-type versus chimeric thyrotropin receptors. *Thyroid*. 9:521-37.

287. Kim WB, Chung HK, Lee HK, et al. 1997. Changes in epitopes for thyroid stimulation antibodies in Graves' disease sera during treatment of hyperthyroidism: Therapeutic implications. *J Clin Endocrinol Metab*. 82:1953-9.

288. Shewring G, and Smith BR. 1982. An improved radioreceptor assay for TSH receptor. *Methods Enzymol*. 17:409-17.

289. Costagliola S, Morgenthaler NG, Hoermann R, et al. 1999. Second generation assay for thyrotropin receptor antibodies has superior diagnostic sensitivity for Graves' disease. *J Clin Endocrinol Metab*. 84:90-7.

290. Schott M, Feldkamp J, Bathan C, et al. 2000. Detecting TSH-Receptor antibodies with the recombinant TBII assay: Technical and Clinical evaluation. 32 (429-35).

291. Feldt-Rasmussen U. 1996. Analytical and clinical performance goals for testing autoantibodies to thyroperoxidase, thyroglobulin and thyrotropin receptor. *Clin Chem*. 42:160-3.

292. Giovanella L, Ceriani L, and Garancini S. 2001. Clinical applications of the 2nd. generation assay for anti-TSH receptor antibodies in Graves' disease. Evaluation in patients with negative 1st. generation test. *Clin Chem Lab med*. 39:25-8.

293. Momotani N, Noh JY, Ishikawa N, et al. 1997. Effects of propylthiouracil and methimazole on fetal thyroid status in mothers with Graves' hyperthyroidism. *J Clin Endocrinol Metab*. 82:3633-6.

294. Brown RS, Bellisario RL, Botero D, et al. 1996. Incidence of transient congenital hypothyroidism due to maternal thyrotropin receptor-blocking antibodies in over one million babies. *J Clin Endocrinol Metab*. 81:1147-51.

295. Gerding MN, van der Meer Jolanda WC, Broenink M, et al. 2000. Association of thyrotropin receptor antibodies with the clinical features of Graves' ophthalmopathy. *Clin Endocrinol*. 52:267-71.

296. Bartelena L, Marcocci C, Bogazzi F, et al. 1998. Relation between therapy for hyperthyroidism and the course of Graves' disease. *N Engl J Med*. 338:73-8.

297. Bech K. 1983. Immunological aspects of Graves' disease and importance of thyroid stimulating immunoglobulins. *Acta Endocrinol (Copenh) Suppl*. 103:5-38.

298. Feldt-Rasmussen U. 1983. Serum thyroglobulin and thyroglobulin autoantibodies in thyroid disease. *Allergy*. 38:369-87.

299. Nygaard B, Metcalfe RA, Phipps J, et al. 1999. Graves' disease and thyroid-associated ophthalmopathy triggered by 131I treatment of non-toxic goitre. *J Endocrinol Invest*. 22:481-5.

300. Haugen BR, Pacini F, Reinert C, et al. 1999. A comparison of recombinant human thyrotropin and thyroid hormone withdrawal for the detection of thyroid remnant or cancer. *J Clin Endocrinol Metab*. 84:3877-85.

301. Spencer CA, LoPresti JS, Fatemi S, et al. 1999. Detection of residual and recurrent differentiated thyroid carcinoma by serum Thyroglobulin measurement. *Thyroid*. 9:435-41 .

302. Schlumberger M, C. P., Fragu P, Lumbroso J, et al 1980. Circulating thyrotropin and thyroid hormones in patients with metastases of differentiated thyroid carcinoma: relationship to serum thyrotropin levels. *J Clin Endocrinol Metab*. 51:513-9.

303. Pacini F, Fugazzola L, Lippi F, et al. 1992. Detection of thyroglobulin in fine needle aspirates of nonthyroidal neck masses: a clue to the diagnosis of metastatic differentiated thyroid cancer. *J Clin Endocrinol Metab*. 74:1401-4.

304. Feldt-Rasmussen U, and Schlumberger M. 1988. European interlaboratory comparison of serum thyroglobulin measurement. *J Endocrinol Invest*. 11:175-81.

305. Feldt-Rasmussen U, Profilis C, Colinet E, et al. 1996. Human thyroglobulin reference

- material (CRM 457) 2nd part: Physicochemical characterization and certification. *Ann Biol Clin.* 54:343-348.
306. Schlumberger M J. 1998. Papillary and Follicular Thyroid Carcinoma. *NEJM.* 338:297-306.
  307. Hjiyiannakis P, Mundy J, and Harmer C. 1999. Thyroglobulin antibodies in differentiated thyroid cancer. *Clin Oncol.* 11:240-4.
  308. Mariotti S, Barbesino G, Caturegli P, Marino M, Manetti L, Pacini F, Centoni R, and Pinchera A. 1995. Assay of thyroglobulin in serum with thyroglobulin autoantibodies: an unobtainable goal? *J Clin Endocrinol Metab.* 80:468-72.
  309. Spencer CA. 1996. Recoveries cannot be used to authenticate thyroglobulin (Tg) measurements when sera contain Tg autoantibodies. *Clin Chem.* 42:661-3.
  310. Massart C, and Maugendre D. 2002. Importance of the detection method for thyroglobulin antibodies for the validity of thyroglobulin measurements in sera from patients with Graves' disease. *Clin Chem.* 48:102-7.
  311. Black EG, and Hoffenberg R. 1983. Should one measure serum thyroglobulin in the presence of anti-thyroglobulin antibodies? *Clin Endocrinol.* 19:597-601.
  312. Smith B, Selby P, Southgate J, et al. 1991. Detection of melanoma cells in peripheral blood by means of reverse transcriptase and polymerase chain reaction. *Lancet.* 338:1227-9.
  313. Luppi M, Morselli M, Bandieri E, et al 1996. Sensitive detection of circulating breast cancer cells by reverse-transcriptase polymerase chain reaction of maspin gene. *Ann Oncol.* 7:619-24.
  314. Ghossein RA, and Bhattacharya S. 2000. Molecular detection and characterisation of circulating tumour cells and micrometastases in solid tumours. *Eur J Cancer.* 36:1681-94.
  315. Ditkoff BA, Marvin MR, Yemul S, et al. 1996. Detection of circulating thyroid cells in peripheral blood. *Surgery.* 120:959-65.
  316. Arturi F, Russo D, Giuffrida D, et al. 1997. Early diagnosis by genetic analysis of differentiated thyroid cancer metastases in small lymph nodes. *J Clin Endocrinol Metab.* 82:1638-41.
  317. Ringel MD, Balducci-Silano PL, Anderson JS, et al. 1998. Quantitative reverse transcription-polymerase chain reaction of circulating thyroglobulin messenger ribonucleic acid for monitoring patients with thyroid carcinoma. *J Clin Endocrinol Metab.* 84:4037-42.
  318. Biscolla RP, Cerutti JM, and Maciel RM. 2000. Detection of recurrent thyroid cancer by sensitive nested reverse transcription-polymerase chain reaction of thyroglobulin and sodium/iodide symporter messenger ribonucleic acid transcripts in peripheral blood. *J Clin Endocrinol Metab.* 85:3623-7.
  319. Takano T, Miyauchi A, Yoshida H, et al. 2001. Quantitative measurement of thyroglobulin mRNA in peripheral blood of patients after total thyroidectomy. *Br J Cancer.* 85:102-6.
  320. Premawardhana LDKE, Phillips DW, Prentice LM, et al. 1994. Variability of serum thyroglobulin levels is determined by a major gene. *Clin Endocrinol.* 41:725-9.
  321. Bertelsen JB, and Hegedus L. 1994. Cigarette smoking and the thyroid. *Thyroid.* 4:327-31.
  322. Knudsen N, Bulow I, Jorgensen T, et al. 2001. Serum Tg - a sensitive marker of thyroid abnormalities and iodine deficiency in epidemiological studies. *J Clin Endocrinol Metab.* 86:3599-603.
  323. Spencer CA, and Wang CC. 1995. Thyroglobulin measurement:- Techniques, clinical benefits and pitfalls. *Endocrinol Metab Clin N Amer.* 24:841-63.
  324. Cohen JH, Ingbar SH, and Braverman LE. 1989. Thyrotoxicosis due to ingestion of excess thyroid hormone. *Endocrine Rev.* 10:113-24.
  325. Mitchell ML, and Hermos RJ. 1995. Measurement of thyroglobulin in newborn screening specimens from normal and hypothyroid infants. *Clin Endocrinol.* 42:523-7.
  326. Smallridge RC, De Keyser FM, Van Herle AJ, et al. 1986. Thyroid iodine content and serum thyroglobulin: clues to the natural history of destruction-induced thyroiditis. *J Clin Endocrinol Metab.* 62:1213-9.
  327. Dunn JT. 1994. When is a thyroid nodule a sporadic medullary carcinoma? *J Clin Endocrinol Metab.* 78:824-5.
  328. Pacini F, Fontanelli M, Fugazzola L, et al. 1994. Routine measurement of serum calcitonin in nodular thyroid diseases allows the preoperative diagnosis of unsuspected sporadic medullary thyroid carcinoma. *J Clin Endocrinol Metab.* 78:826-9.

329. Cobin RH. 1992. Medullary carcinoma of the thyroid. In *Malignant tumors of the thyroid: clinical concepts and controversies*. S. D. Cobin RH, editor. Springer-Verlag,, New York. 112-41.
330. Mulligan LM, Kwok JB, Healey CS, et al. 1993. Germ-line mutations of the RET proto-oncogene in multiple endocrine neoplasia type 2A. *Nature*. 363:458-60.
331. Hofstra RM, Landvaster RM, Ceccherini I, et al. 1994. A mutation in the RET proto-oncogene associated with multiple endocrine neoplasia type 2B and sporadic medullary thyroid carcinoma. *Nature*. 367:375-6.
332. Heyningen van V. 1994. One gene-four syndromes. *Nature*. 367:319-20.
333. Becker KL, Nysten ES, Cohen R, et al. 1996. Calcitonin: structure, molecular biology and actions. In: J.P. Belezian, L.E. Raisz, G.A. Rodan eds. *Principle of bone biology*, Academic Press, San Diego:471-4.
334. Motte P, Vauzelle P, Gardet P, et al. 1988. Construction and clinical validation of a sensitive and specific assay for mature calcitonin using monoclonal anti-peptide antibodies. *Clin Chim Acta*. 174:35-54.
335. Zink A, Blind E, and Raue F. 1992. Determination of serum calcitonin by immunometric two-site assays in normal subjects and patients with medullary thyroid carcinoma. *Eur J Clin Chem Biochem*. 30:831-5.
336. Engelbach M, Gorges R, Forst T, et al. 2000. Improved diagnostic methods in the follow-up of medullary thyroid carcinoma by highly specific calcitonin measurements. *J Clin Endocrinol Metab*. 7:1890-4.
337. Milhaud G, Tubiana M, Parmentier C, et al. 1968. Epithelioma de la thyroide secretant de la thyrocalcitonine. *C.R. Acad. Sci (serie D)*, Paris. 266:608-10.
338. Guilloreau D, Perdrisot D, Calmettes C, et al. 1990. Diagnosis of medullary carcinoma of the thyroid by calcitonin assay using monoclonal antibodies. *J Clin Endocrinol Metab*. 71:1064-7.
339. Niccoli P, Wion-Barbot N, Caron P, et al. 1997. Interest of routine measurement of serum calcitonin (CT): study in a large series of thyroidectomized patients. *J Clin Endocrinol Metab*. 82:338-41.
340. Vierhapper H, Raber W, Bieglmayer C, et al. 1997. Routine measurement of plasma calcitonin in nodular thyroid diseases. *J Clin Endocrinol Metab*. 82:1589-93.
341. Cohen R, Campos JM, Salaun C, et al. 2000. Preoperative calcitonin levels are predictive of tumor size and postoperative calcitonin normalization in medullary thyroid carcinoma. *J Clin Endocrinol Metab*. 85:909-22.
342. Wells SA, Baylin SB, Linehan WM, et al. 1978. Provocative agents and the diagnosis of medullary carcinoma of the thyroid gland. *Ann Surg*. 188:139-41.
343. Barbot N, Calmettes C, Schuffenecker I, et al. 1994. Pentagastrin stimulation test and early diagnosis of medullary carcinoma using an immunoradiometric assay of calcitonin: comparison with genetic screening in hereditary medullary thyroid carcinoma. *J Clin Endocrinol Metab*. 78:114-20.
344. Gagel RF. 1996. The abnormal pentagastrin test. *Clin Endocrinol*. 44:221-2.
345. Wion-Barbot N, Schuffenecker I, Niccoli P, et al. 1997. Results of the calcitonin stimulation test in normal volunteers compared with genetically unaffected members of MEN 2A and familial medullary thyroid carcinoma families. *Ann Endocrinol*. 58:302-8.
346. Telander RL, and Moir CR. 1994. Medullary thyroid carcinoma in children. *Semin Pediatr Surg*. 3:188-93.
347. Niccoli-Sire P, Murat A, Baudin E, et al. 1999. Early or prophylactic thyroidectomy in MEN2/FMTC gene carriers: results in 71 thyroidectomized patients. *Eur J Endocrinol*. 141:468-74.
348. Niccoli-Sire P, Murat A, Rohmer V, et al. 2001. Familial medullary thyroid carcinoma (FMTC) with non-cysteine RET mutations: phenotype-genotype relationship in large series of patients. *J Clin Endocrinol Metab*. In Press.
349. Body JJ, Chanoine JP, Dumon JC, and Delange F. 1993. Circulating calcitonin levels in healthy children and subjects with congenital hypothyroidism from birth to adolescence. *J Clin Endocrinol Metab*. 77:565-7.
350. Gharib H, Kao PC, and Heath H 3rd. 1987. Determination of silica-purified plasma calcitonin for the detection and management of medullary thyroid carcinoma: comparison of two provocative tests. *Mayo Clin Proc*. 62:373-8.
351. Telander R, Zimmerman D, Sizemore GW, et al. 1989. Medullary carcinoma in children.

Results of early detection and surgery. *Arch Surg.* 124:841-3.

352. Calmettes C, Ponder BA, Fisher JA, et al. 1992. Early diagnosis of multiple endocrine neoplasia type 2 syndrome: consensus statement. European community concerted action: medullary thyroid carcinoma. *Eur J Clin Invest.* 22:755-60.

353. Modigliani E, Cohen R, Campos JM, et al. 1998. Prognostic factors for survival and biochemical cure in medullary thyroid carcinoma: results in 899 patients. *Clin Endocrinol.* 48:265-73.

354. Machens A, Gimm O, Ukkat J, et al. 2000. Improved prediction of calcitonin normalization in medullary thyroid carcinoma patients by quantitative lymph node analysis. *Cancer.* 88:1909-15.

355. Fugazzola L, Pinchera A, Lucchetti F, et al. 1994. Disappearance rate of serum calcitonin after total thyroidectomy for medullary thyroid carcinoma. *Internat J Biolog Markers.* 9:21-4.

356. Ferreira-Valbuena H, Fernandez de Arguello E, Campos G, et al. 1991. Serum concentration of calcium and calcitonin in hyperthyroidism caused by Graves' disease. *Invest Clin.* 32:109-14.

357. Lips CJM, Hoppener JWM, and Thijssen JHH. 2001. Medullary thyroid carcinoma: role of genetic testing and calcitonin measurement. *Ann Clin Biochem.* 38:168-79.

358. Niccoli P, Brunet Ph, Roubicek C, et al. 1995. Abnormal calcitonin basal levels and pentagastrin response in patients with chronic renal failure on maintenance hemodialysis. *Eur J Endocrinol.* 132:75-81.

359. Snider RH, Nysten ES, and Becker KL. 1997. Procalcitonin and its component peptides in systemic inflammation: immunochemical characterization. *J Invest Med.* 47:552-60.

360. Russwurm S, Wiederhold M, Oberhoffer M, et al. 1999. Molecular aspects and natural source of Procalcitonin. *Clin Chem Lab Med.* 37:789-97.

361. Niccoli P, Conte-Devolx B, Lejeune PJ, et al. 1996. Les hypercalcitoninemies en dehors des cancers medullaires de la thyroide. *Ann Endocrinol.* 57:15-21.

362. Baudin E, Bidart JM, Rougier P, et al. 1999. Screening for multiple endocrine neoplasia type 1 and hormonal production in apparently sporadic neuroendocrine tumors. *J Clin Endocrinol Metab.* 84:114-20.

363. DeLellis RA. 1992. C-Cell hyperplasia. In: Rosai J., Carangiu M.L., DeLellis R.A. eds: *Atlas of Tumor Pathology, 3rd. series, Fasc 5: tumors of the thyroid gland.* Washington DC, Armed Forces Institute of Pathology.:247-58.

364. Guyetant S, Wion-Barbot N, and Rousselet MC. 1994. C-cell hyperplasia associated with chronic lymphocytic thyroiditis: a retrospective study of 112 cases. *Hum Pathol.* 25:514-21.

365. Albores-Saavedra J, Monforte H, Nadji M, et al. 1988. C-Cell hyperplasia in thyroid tissue adjacent to follicular cell tumor. *Hum Pathol.* 19:795-9.

366. Mulligan LM, Marsh DJ, Robinson BG, et al. 1995. Genotype-phenotype correlation in multiple endocrine neoplasia type 2: report of the international RET mutation consortium. *J Intern Med.* 238:243-6.

367. Eng C, Clayton d, Schuffenecker I, et al. 1996. The relationship between specific RET proto-oncogene mutations and disease phenotype in multiple endocrine neoplasia type 2. International RET mutation consortium analysis. *JAMA.* 276:1575-9.

368. Ito S, Iwashita T, Asai N, et al. 1997. Biological properties of RET with cysteine mutations correlate with multiple endocrine neoplasia type 2A, familial medullary thyroid carcinoma and Hirschsprung's disease phenotype. *Cancer Res.* 57:2870-2.

369. Heshmati HM, Gharib H, Khosla S, et al. 1997. Genetic testing in medullary thyroid carcinoma syndromes: mutation types and clinical significance. *Mayo Clin Proc.* 72:430-6.

370. Berndt I, Reuter M, Saller B, et al. 1998. A new hot spot for mutations in the RET proto-oncogene causing familial medullary thyroid carcinoma and multiple endocrine neoplasia type 2A. *J Clin Endocrinol Metab.* 83:770-4.

371. Komminoth P, Roth J, Muletta-Feurer S, et al. 1996. RET proto-oncogene point mutations in sporadic neuroendocrine tumors. *J Clin Endocrinol Metab.* 81:2041-6.

372. Conte-Devolx B, Schuffenecker I, Niccoli P, and et al. 1997. Multiple Endocrine Neoplasia Type 2: Management of patients and subjects at risk. *Horm Res.* 47:221-6.

373. Smith DP, Houghton C, and Ponder BA. 1997. Germline mutation of RET codon 883 in

two cases of de novo MEN2B. *Oncogene*. 15:1213-7.

374. Carlson KM, Bracamontes J, Jackson CE, et al. 1994. Parent-of-origin effects in multiple endocrine neoplasia type 2B. *J Hum Genet*. 55:1076-82.

375. Moers AMJ, Landsvater RM, Schaap C, et al 1996. Familial medullary thyroid carcinoma: not a distinct entity/ Genotype-phenotype correlation in a large family: familial medullary thyroid carcinoma revisited. *Am J Med*. 101:634-41.

376. Dunn JT. 1992. Iodine deficiency - the next target for elimination. *N Engl J Med*. 326:267-8.

377. Delange F. 1995. Correction of iodine deficiency: benefits and possible side effects. *Eur J Endocrinol*. 132:542-3.

378. Dunn JT. 1998. Whats happening to our iodine. *J Clin Endocrinol Metab*. 83:3398-3400.

379. Knudsen N, Christiansen E, Brandt-Christensen M, et al. 2000. Age- and sex-adjusted iodine/creatinine ratio. A new standard in epidemiological surveys? Evaluation of three different estimates of iodine excretion based on casual urine samples and comparison to 24 h values. *Eur J Clin Nutr*. 54:361-3.

380. Aumont G, and Tressol JC. 1986. Improved routine method for the determination of total iodine in urine and milk. *Analyst*. 111:841-3.

381. Unak P, Darcan S, Yurt F, et al. 1999. Determination of iodine amounts in urine and water by isotope dilution analysis. *biol Trace Elem Res Winter*. 71-2:463-70.

382. Kilbane MT, Ajja RA, Weetman AP, et al. 2000. Tissue Iodine content and serum mediated 125I uptake blocking activity in breast cancer. *J Clin Endocrinol Metab*. 85:1245-50.

383. Liberman CS, Pino SC, Fang SL, et al. 1998. Circulating iodine concentrations during and after pregnancy. *J Clin Endocrinol Metab*. 83:3545-9.

384. Vought RL, London WT, Lutwak L, et al. 1963. Reliability of estimates of serum inorganic iodine and daily faecal and urinary iodine excretion from single casual specimens. *J Clin Endocrinol Metab*. 23:1218-28.

385. Smyth PPA, Darke C, Parkes AB, et al. 1999. Assessment of goitre in an area of endemic iodine deficiency. *Thyroid*. 9:895-901.

386. Thomson CD, Smith TE, Butler KA, et al. 1996. An evaluation of urinary measures of iodine and selenium status. *J Trace Elem Med and Biol*. 10:214-22.

387. Als C, Helbling A, Peter K, et al et al. 2000. Urinary iodine concentration follows a circadian rhythm: A study with 3023 spot urine samples in adults and children. *J Clin Endocrinol Metab*. 85:1367-9.

388. Lightowler H, and Davis JG. 1999. Iodine intake and iodine deficiency in vegans as assessed by the duplicate-portion technique and urinary iodine excretion. *Br. J Nutr*. 80:529-35.

389. Utiger RD. 1999. Maternal hypothyroidism and fetal development. *N Engl J Med*. 341:601-2.

390. Glinoe D, and Delange F. 2000. The potential repercussions of maternal, fetal, and neonatal hypothyroxinemia on the progeny. *Thyroid*.

391. Aboul-Khair S, Crooks J, Turnbull AC, et al. 1964. The physiological changes in thyroid function during pregnancy. *Clin Sci*. 27:195-207.

392. Smyth PPA, Smith DF, Radcliff M, et al. 1997. Maternal iodine status and thyroid volume during pregnancy: correlation with neonatal intake. *J Clin Endocrinol Metab*. 82:2840-3.

393. Gunton JE, Hams GH, Fiegert M, et al. 1999. iodine deficiency in ambulatory participants at a Sydney teaching hospital: Is Australia truly iodine replete? *Med J Aust*. 171:467-70.

394. Smyth PPA. 1999. Variation in iodine handling during normal pregnancy. *Thyroid*. 9:637-42.

395. Institute of Medicine. 2001. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc (2001). National Academic Press.

396. Koutras DA, Papadopoulos SN, Fontouris JG, et al. 1968. Comparison of methods for measuring the plasma inorganic iodine and the absolute iodine uptake by the thyroid gland. *J Clin Endocrinol Metab*. 28:757-60.

397. Mizukami Y, Michigishi T, Nonomura A, et al. 1993. Iodine-induced hypothyroidism: a

- clinical and histological study of 28 patients. *J Clin Endocrinol Metab.* 76:466-71.
398. Heymann WR. 2000. Potassium iodide and the Wolff-Chaikhoff effect: relevance for the dermatologist. *J Am Acad Dermatol.* 42:490-2.
399. Miukami, Michigishi T, Nonomura A, et al. 1993. Iodine-induced hypothyroidism. A clinical and histological study of 28 patients. *J Clin Endocrinol Metab.* 76:466-71.
400. Stanbury JB, Ermans AE, Bourdoux P, et al. 1998. Iodine-induced hyperthyroidism: occurrence and epidemiology. *Thyroid.* 8:83-100.
401. Roti E, and Uberti ED. 2001. Iodine excess and hyperthyroidism. *Thyroid.* 5:493-500.
402. Baltisberger BL, Minder CE, and Burgi H. 1995. Decrease of incidence of toxic nodular goitre in a region of Switzerland after full correction of mild iodine deficiency. *Eur J Endocrinol.* 132:546-9.
403. Bacher-Stier RG, Totsch M, Kemmler G, et al. 1997. Incidence and clinical characteristics of thyroid carcinoma after iodine prophylaxis in an endemic goiter country. *Thyroid.* 7:733-41.
404. Barakat MCD, Hetherington AM, Smyth PPA, et al. 1994. Hypothyroidism secondary to topical iodine treatment in infants with spina bifida. *Acta Paediat.* 83:741-3.
405. Martino E, Safran M, Aghino-Lombardi F, et al. 1984. Environmental iodine intake and thyroid dysfunction during chronic amiodarone therapy. *Ann Intern Med.* 101:28-34.
406. Rose NR, Rasooly L, Saboori AM, et al. 1999. Linking iodine with autoimmune thyroiditis. *Environmental Health Perspectives.* 107:749-52.
407. Premawardhana LDKEPA, Smyth PPA, Wijeyaratne C, et al. 2000. Increased prevalence of thyroglobulin antibodies in Sri Lankan schoolgirls - is iodine the cause? *Eur J Endocrinol.* 107:143.
408. Costa A, Testori OB, Cenderelli C, Giribone G, et al. 1978. Iodine content of human tissues after administration of iodine containing drugs or contrast media. *J Endocrinol Invest.* 1:221-5.
409. May W, Wu D, Eastman C, Bourdoux P, et al. 1990. Evaluation of automated urinary iodine methods: problems of interfering substances identified. *Clin Chem.* 35:865-9.
410. Lauber K. 1975. Iodine determination in biological material. Kinetic measurement of the catalytic activity of iodine. *Analyt Chem.* 47:769-71.
411. Mantel M. 1971. Improved method for the determination of iodine in urine. *Clin Chim Acta.* 33:39-44.
412. Tsuda K, Namba H, Nomura T, et al. 1995. Automated Measurement of urinary iodine with use of ultraviolet radiation. *Clin Chem.* 41:581-5.
413. Dunn JT, Crutchfield HE, Gutenkunst R, et al. 1993. Two simple methods for measuring iodine in urine. *Thyroid.* 3:119-23.
414. May SL, May WA, Bourdoux PP, et al. 1997. Validation of a simple, manual urinary iodine method for estimating the prevalence of iodine-deficiency disorders, and interlaboratory comparison with other methods. *J Clin Nutr.* 65:1441-5.
415. Ohashi T, Yamaki M, Pandav SC, et al. 2000. Simple microplate method for determination of urinary iodine. *Clin Chem.* 46:529-36.
416. Rendl J, Seybold S, and Borner W. 1994. Urinary iodine determined by paired-ion reverse-phase HPLC with electrochemical detection. *Clin Chem.* 40:908-13.
417. Haldimann M, Zimmerli B, Als C, et al. 1998. Direct determination of urinary iodine by inductively coupled plasma mass spectrometry using isotope dilution with iodine-129. *Clin Chem.* 44:817-24.
418. Mura P, Piriou A, Guillard O, et al. 1985. Dosage des iodures urinaires par electrode spécifique: son interet au cours des dysthyroides. *Ann Biol Clin.* 44:123-6.
419. Allain P, Berre S, Krari N, et al. 1993. Use of plasma iodine assays for diagnosing thyroid disorders. *J Clin Pathol.* 46:453-5.
420. Vander JB, Gaston EA, and Dawber TR. 1968. The significance of nontoxic thyroid nodules: Final report of a 15-year study of the incidence of thyroid malignancy. *Ann Intern Med.* 69:537-40.
421. Rojeski MT, and Gharib H. 1985. Nodular thyroid disease: Evaluation and management. *N Engl J Med.* 313:428-36.
422. Mazzaferrri EL. 1993. Management of a solitary thyroid nodule. *N Engl J Med.* 328:553-

9.

423. Kirkland RT, and Kirkland JL. 1973. Solitary thyroid nodules in 30 children and report of a child with thyroid abscess. *Pediatrics*. 51:85-90.
424. Rallison ML, Dobyns EM, Keating FR, Rall J, and Tyler E. 1975. Thyroid nodularity in children. *JAMA*. 233:1069-72.
425. Khurana KK, Labrador E, Izquierdo R, et al. 1999. The role of fine-needle aspiration biopsy in the management of thyroid nodules in children, adolescents and young adults: A multi-institutional study. *Thyroid*. 4:383-6.
426. Aghini-Lombardi F, Antonangeli L, Martino E, et al. 1999. The spectrum of thyroid disorders in an iodine-deficient community: the Pescopanano Survey. *J Clin Endocrinol Metab*. 84:561-6.
427. Hamburger JI, Husain M, Nishiyama R, et al. 1989. Increasing the accuracy of fine-needle biopsy for thyroid nodules. *Arch Pathol Lab Med*. 113:1035-41.
428. Hundahl SA, Cady B, Cunningham MP, et al. 2000. Initial results from a prospective cohort study of 5583 cases of thyroid carcinoma treated in the United States during 1996. *Cancer (Cytopathol)*. 89:202-17.
429. Leenhardt L, Hejblum G, Franc B, et al. 1999. Indications and limits of ultrasound-guided cytology in the management of nonpalpable thyroid nodules. *J Clin Endocrinol Metab*. 84:24-8.
430. Braga M, Cavalcanti TC, Collaco LM, et al. 2001. Efficacy of ultrasound-guided fine-needle aspiration biopsy in the diagnosis of complex thyroid nodules. *J Clin Endocrinol Metab*. 86:4089-91.
431. Cochand-Priollet B, Guillausseau P, et al. 1994. The diagnostic value of fine-needle aspiration biopsy under ultrasonography in nonfunctional thyroid nodules: a prospective study comparing cytologic and histologic findings. *Am J Med*. 97:152-7.
432. Takashima S, Fukuda H, and Kobayashi T. 1994. Thyroid nodules: Clinical effect of ultrasound-guided fine needle aspiration biopsy. *J Clin Ultrasound*. 22:535-42.
433. Gharib H. 1994. Fine-needle aspiration biopsy of thyroid nodules: Advantages, limitations and effect. *Mayo Clin Proc*. 69:44-9.
434. Hamberger B, Gharib H, Melton LF III, et al. 1982. Fine-needle aspiration biopsy of thyroid nodules. Impact on thyroid practice and cost of care. *Am J Med*. 73:381-4.
435. Grant CS, Hay ID, Gough IR, et al. 1989. Long-term follow-up of patients with benign thyroid fine-needle aspiration cytologic diagnoses. *Surgery*. 106:980-6.
436. Liel Y, and Barchana M. 2001. Long-term follow-up of patients with initially benign fine-needle aspirations. *Thyroid*. 11:775-8.
437. Belfiore A, La Rosa G, La Porta GA, et al. 1992. Cancer Risk in patients with cold thyroid nodules: Relevance of iodine intake, sex, age and multinodularity. *J Amer Med*. 93:363-9.
438. Tuttle RM, Lemar H, and Burch HB. 1998. Clinical features associated with an increased risk of thyroid malignancy in patients with follicular neoplasia by fine-needle aspiration. *Thyroid*. 8:377-83.
439. Kumar H, Daykin J, Holder R, et al. 1999. Gender, clinical findings, and serum thyrotropin measurements in the prediction of thyroid neoplasia in 1005 patients presenting with thyroid enlargement and investigated by fine-needle aspiration cytology. *Thyroid*. 11:1105-9.
440. Moosa M, and Mazzaferri EL. 1997. Outcome of differentiated thyroid cancer diagnosed in pregnant women. *J Clin Endocrinol Metab*. 82:2862-6.
441. Goellner JR. 1997. Problems and pitfalls in thyroid cytology. *Monogr Pathol*. 39:75-93.
442. Baldet L, Manderscheid JC, et al. 1989. The management of differentiated thyroid cancer in Europe in 1988. Results of an international survey. *Acta Endocrinol (Copenh)*. 120:547-58.
443. De Micco, Zoro P, Garcia S, et al. 1994. Thyroid peroxidase immunodetection as a tool to assist diagnosis of thyroid nodules on fine-needle aspiration biopsy. *Eur J Endocrinol*. 131:474-9.
444. Faroux MJ, Theobald S, Pluot M, et al. 1997. Evaluation of the monoclonal antithyropoxidase MoAb47 in the diagnostic decision of cold thyroid nodules by fine-needle aspiration. *Pathol Res Pract*. 193:705-12.
445. Inohara H, Honjo Y, Yoshii T, et al. 1999. Expression of galectin-3 in fine-needle aspirates as a diagnostic marker differentiating benign from malignant thyroid neoplasms. *Cancer*. 85:2475-84.



446. Medeiros-Neto G, Nascimento MC, Bisi H, et al. 2001. Differential reactivity for Galectin-3 in Hurthle Cell Adenomas and Carcinomas. *Endocr Pathol.* 12:275-9.
447. Saggiorato E, Cappia S, De Guili P, et al. 2001. Galectin -3 as a presurgical immunocyto-diagnostic marker of minimally invasive follicular carcinoma. *J Clin Endocrinol Metab.* 86:5152-8.
448. Bartolazzi A, Gasbarri A, Papotti M, et al. 2001. Application of an immunodiagnostic method for improving preoperative diagnosis of nodular thyroid lesions. *Lancet.* 357:1644-50.
449. Leteurtre E, Leroy Z, Pattou F, et al. 2001. Why do frozen sections have limited value in encapsulated or minimally invasive follicular carcinoma of the thyroid? *Amer J Clin Path.* 115:370-4.
450. Stojadinovic A, Ghossein RA, Hoos A, et al. 2001. Hurthle cell carcinoma: a critical histopathologic appraisal. *J Clin Oncol.* 19:2616-25.
451. Carmeci C, Jeffrey RB, McDougall IR, et al. 1998. Ultrasound-guided fine-needle aspiration biopsy of thyroid masses. *Thyroid.* 8:283-9.
452. Yang GCH, Liebeskind D, and Messina AV. 2001. Ultrasound-guided fine-needle aspiration of the thyroid assessed by ultrafast papanicolaou stain: Data from 1135 biopsies with a two-six-year follow-up. *Thyroid.* 6:581-9.
453. LaFranchi SH, Dussault JH, Fisher DA, et al. 1993. Newborn screening for congenital hypothyroidism: Recommended guidelines. *Pediatrics.* 91:1203-9.
454. Gruters A, Delange F, Giovanelli G, Klett M, Richiccioli P, Torresani T, et al. 1993. Guidelines for neonatal screening programmes for congenital hypothyroidism. *Pediatr.* 152:974-5.
455. Toublanc JE. 1999. Guidelines for neonatal screening programs for congenital hypothyroidism. *Acta Paediatr.* 88 Suppl 432:13-4.
456. Gruneiro-Papendieck L, Prieto L, Chiesa A, et al. 2000. Usefulness of thyroxine and free thyroxine filter paper measurements in neonatal screening for congenital hypothyroidism of preterm babies. *J Med Screen.* 7:78-81.
457. Hanna DE, Krainz PL, Skeels MR, et al. 1986. Detection of congenital hypopituitary hypothyroidism: Ten year experience in the Northwest Regional Screening Program. *J Pediatr.* 109:959-64.
458. Fisher DA. 1999. Hypothyroxinemia in premature infants: is thyroxine treatment necessary? *Thyroid.* 9:715-20.
459. Wang ST, Pizzalato S, and Demshar HP. 1998. Diagnostic effectiveness of TSH screening and of T4 with secondary TSH screening for newborn congenital hypothyroidism. *Clin Chim Acta.* 274:151-8.
460. Delange F. 1998. Screening for congenital hypothyroidism used as an indicator of the degree of IDD and its control. *Thyroid.* 8:1185-92.
461. Law WY, Bradley DM, Lazarus JH, et al. 1998. Congenital hypothyroidism in Wales (1982-93): demographic features, clinical presentation and effects on early neurodevelopment. *Clin Endocrinol.* 48:201-7.
462. Mei JV, Alexander JR, Adam BW, et al. 2001. Use of filter paper for the collection and analysis of human whole blood specimens. *J Nutr.* 131:1631S-6S.
463. LaFranchi SH, Hanna CE, Krainz PL, et al. 1985. Screening for congenital hypothyroidism with specimen collection at two time periods: Results of the Northwest Regional Screening Program. *J Pediatr.* 76:734-40.
464. Matsuura N, Yamada Y, Nohara Y, et al. 1980. Familial neonatal transient hypothyroidism due to maternal TSH-binding inhibitor immunoglobulins. *N Engl J Med.* 303:738-.
465. McKenzie JM, and Zakaria M. 1992. Fetal and neonatal hyperthyroidism and hypothyroidism due to maternal TSH receptor antibodies. *Thyroid.* 2:155-9.
466. Vogiatzi MG, and Kirkland JL. 1997. Frequency and necessity of thyroid function tests in neonates and infants with congenital hypothyroidism. *Pediatr.* 100 (E6).
467. Pohlenz J, Rosenthal IM, Weiss RE, et al. 1998. Congenital hypothyroidism due to mutations in the sodium/iodide symporter. Identification of a nonsense mutation producing a downstream cryptic 3' splice site. *J Clin Invest.* 101:1028-35.
468. Nordyke RA, Reppun TS, Mandanay LD, et al. 1998. Alternative sequences of thyrotropin and free thyroxine assays for routine thyroid function testing. Quality and cost. *Arch Intern Med.* 158:266-72.