**Pease Study**

**Clinical Test Results Report**

Dear [NAME/NAME OF PARENT OR GUARDIAN],

The following tables show the results of clinical tests that we performed in [your/your child’s] blood or serum on |\_\_|\_\_|/|\_\_|\_\_|/|\_\_|\_\_|*.* The results that are out of normal range are marked red.

These clinical tests are mostly those that your doctor would perform in an office. We advise you to go over the results with your doctor. If he or she has any questions about some of the more specialized tests we did, he or she can contact us at the number provided below.

Because we are providing these results |\_\_|\_\_| months after ATSDR collected [your/your child’s] blood, the results may be of limited value to you or your doctor, especially if you are already under treatment or being followed for a particular chronic condition that the results indicate.

Some people will not have results for all chemicals. [You/Your child] may not have a result for a chemical test if [your/his/her] level is lower than the lab’s limit of detection (<LOD). [You/Your child] may also not have a result if the blood sample did not pass a lab quality control check. If the reason for missing results is known, it will be included with [your/your child’s] results.

You or your physician may contact us with questions about [your/your child’s] clinical test results by calling ATSDR at [*study telephone number*].

Thank you for your understanding and your participation in the study.

Sincerely,

Marian Pavuk, MD, PhD Frank Bove, DSc

Co-Principal Investigators

Pease PFAS Health Study

##

## Table 1. Results of your clinical tests for thyroid hormones, glycemic parameters, lipids, and liver function.

## \* NOTE: the displayed clinical ranges will be updated when the contract labs are selected.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Test name*** | **Your Result** | **Adult Comparison Values** | **Child Comparison Values** |
| ***Thyroid Hormones and Antibodies*** |  | **Clinical Ranges** |  |
| Thyroid Stimulating Hormone (TSH) |  | 18-19 years: 0.5-4.3 mIU/L [[1]](#footnote-1)>20 years: 0.3-4.2 mIU/L | 4-5 years: 0.7-6.0 mIU/L6-10 years: 0.6-4.8 mIU/L |
| Total Thyroxin (TT4) |  | 18 -19 years: 5.9-13.2 mcg/dL [[2]](#footnote-2)≥20 years): 4.5-11.7 mcg/dL**≥50 years:****≥6.0 ng/dL (check units) [[3]](#footnote-3)** | 4-5 years: 6.0-14.7 mcg/dL6 -10 years: 6.0-13.8 mcg/dL11 -17 years: 5.9-13.2 mcg/dL |
| Free T4 |  | 18-19 years: 1.0-1.6 ng/dL 2≥20 years of age: 0.9-1.7 ng/dL | 4-5 years: 1.0-1.8 ng/dL6-10 years: 1.0-1.7 ng/dL11-17 years: 1.0-1.6 ng/dL |
| Total Triiodothyronine (TT3) |  | 18-19 years: 91-218 ng/dL [[4]](#footnote-4)(> or =20 years): 80-200 ng/dL | 4-5 years: 92-248 ng/dL6-10 years: 93-231 ng/dL11-17 years: 91-218 ng/dL |
| ***Other Hormones*** |  |  |  |
| Total Testosterone |  | Males: [[5]](#footnote-5)18 years: 300-1,200 ng/dL≥19 years: 240-950 ng/dLFemales:    18 years: 20-75 ng/dL≥19 years: 8-60 ng/dL       | Males:4-9 years: <7-20 ng/dL10-11 years: <7-130 ng/dL12-13 years: <7-800 ng/dL14 years: <7-1,200 ng/dL15-16 years: 100-1,200 ng/dL17-18 years: 300-1,200 ng/dL≥19 years: 240-950 ng/dLFemales:    4-9 years: <7-20 ng/dL10-11 years: <7-44 ng/dL12-16 years: <7-75 ng/dL17 years: 20-75 ng/dL |
| Estradiol |  | Males: [[6]](#footnote-6)10-40 pg/mLFemales:Premenopausal: 15-350 pg/mL\*\*Postmenopausal: <10 pg/mL\*\*E2 levels vary widely through the menstrual cycle. | Males:Tanner Stage I <LOD-13 pg/mLLTanner Stage II <LOD-16 pg/mLTanner Stage III <LOD-26 pg/mLTanner Stage IV <LOD-38 pg/mLTanner Stage V 10-40 pg/mLFemales:Tanner Stage I <LOD-20 pg/mLTanner Stage II <LOD-24 pg/mLTanner Stage III <LOD-60 pg/mLTanner Stage IV 15-85 pg/mLTanner Stage V 15-350 pg/mL |
| Sex hormone-binding globulin (SHBG) |  | Males: 10-57 nmol/L [[7]](#footnote-7)Females (non-pregnant): 18-144 nmol/L | Males:Tanner Stage I 31-167 nmol/LTanner Stage II 49-179 nmol/LTanner Stage III 5.8-182 nmol/LTanner Stage IV 14-98 nmol/LTanner Stage V 10-57 nmol/LFemales:Tanner Stage I 43-197 nmol/LTanner Stage II 7.7-119 nmol/LTanner Stage III 31-191 nmol/LTanner Stage IV 31--166 nmol/LTanner Stage V 18-144 nmol/L |
| Follicle stimulating hormone (FSH) |  | Males: [[8]](#footnote-8)≥18 years: 1.0-18.0 IU/LFemales:≥18 years:PremenopausalFollicular: 3.9-8.8 IU/LMidcycle: 4.5-22.5 IU/LLuteal: 1.8-5.1 IU/LPostmenopausal: 16.7-113.6 IU/L | Males:4-6 years: ≤6.7 IU/L7-8 years: ≤4.1 IU/L9-10 years: ≤4.5 IU/L11 years: 0.4-8.9 IU/L12 years: 0.5-10.5 IU/L13 years: 0.7-10.8 IU/L14 years: 0.5-10.5 IU/L15 years: 0.4-18.5 IU/L16 years: ≤9.7 IU/L17 years: 2.2-12.3 IU/LFemales4-6 years: 3.3 IU/L7-8 years: ≤11.1 IU/L9-10 years: 0.4-6.9 IU/L11 years: 0.4-9.0 IU/L12 years: 1.0-17.2 IU/L13 years: 1.8-9.9 IU/L14-16 years: 0.9-12.4 IU/L17 years: 1.2-9.6 IU/L |
| Insulin-like growth factor (IGF-1) |  | Males: [[9]](#footnote-9)18-22 years: 91-442 ng/mL23-25 years: 66-346 ng/mL26-30 years: 60-329 ng/mL31-35 years: 54-310 ng/mL36-40 years: 48-292 ng/mL41-45 years: 44-275 ng/mL46-50 years: 40-259 ng/mL51-55 years: 37-245 ng/mL56-60 years: 34-232 ng/mL61-65 years: 33-220 ng/mL66-70 years: 32-209 ng/mL71-75 years: 32-200 ng/mL76-80 years: 33-192 ng/mL81-85 years: 33-185 ng/mL86-90 years: 33-179 ng/mL>91 years: 32-173 ng/mLFemales:18-22 years: 85-370 ng/mL23-25 years: 73-320 ng/mL26-30 years: 66-303 ng/mL31-35 years: 59-279 ng/mL36-40 years: 54-258 ng/mL41-45 years: 49-240 ng/mL46-50 years: 44-227 ng/mL51-55 years: 40-217 ng/mL56-60 years: 37-208 ng/mL61-65 years: 35-201 ng/mL66-70 years: 34-194 ng/mL71-75 years: 34-187 ng/mL76-80 years: 34-182 ng/mL81-85 years: 34-177 ng/mL86-90 years: 33-175 ng/mL≥91 years: 25-179 ng/mL | Males:4 years: 30-236 ng/mL5 years: 39-250 ng/mL6 years: 47-275 ng/mL7 years: 54-312 ng/mL8 years: 61-356 ng/mL9 years: 67-405 ng/mL10 years: 73-456 ng/mL11 years: 79-506 ng/mL12 years: 84-551 ng/mL13 years: 90-589 ng/mL14 years: 95-618 ng/mL15 years: 99-633 ng/mL16 years: 104-633 ng/mL17 years: 107-615 ng/mLFemales:4 years: 33-237 ng/mL5 years: 36-234 ng/mL6 years: 39-246 ng/mL7 years: 44-279 ng/mL8 years: 51-334 ng/mL9 years: 61-408 ng/mL10 years: 73-495 ng/mL11 years: 88-585 ng/mL12 years: 104-665 ng/mL13 years: 120-719 ng/mL14 years: 136-729 ng/mL15 years: 147-691 ng/mL16 years: 153-611 ng/mL17 years: 149-509 ng/mL |
| ***Glycemic Parameters*** |  | **Clinical Guidelines and Ranges** |  |
| Glucose, fasting, 8-hr |  | Normal: <100 mg/dL [[10]](#footnote-10)Prediabetes: 100–125 mg/dLDiabetes: ≥126 mg/dLCritical Value: <40 mg/dL[[11]](#footnote-11)**Critical Value: ≥400 mg/dL10** |  |
| Insulin |  | <17 µU/ml 3 |  |
| Glycosylated Hemoglobin(HbA1c) |  | Diabetes Risk [[12]](#footnote-12)Normal: <5.7%Prediabetes: 5.7-6.4%Diabetes: ≥6.5% | <18 years:Criteria for diagnosing diabetes have not been established. |
| Thyrosine Phosphatase-like Protein Autoantibodies (IA 2) |  | Negative Antibody: DK<5 3Positive Antibody: DK≥5 | Store for later |
| Glutamate Decarboxylase -65 (anti-GAD 65) |  | Negative Antibody: DK≤33 3Positive Antibody: DK>33  | Store for later |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Lipids*** |  | **Clinical Guidelines and Ranges** |  |
| Total Cholesterol, fasting |  | Coronary Heart Disease Risk (CHD)[[13]](#footnote-13) |
| Adult, 18+ years:Desirable: <200 mg/dL Borderline High: 200-239 mg/dLHigh: ≥240 mg/dL | Child, 2-17 years:Acceptable: <170 mg/dLBorderline high: 170-199 mg/dLHigh: ≥200 mg/dL |
| Triglycerides, fasting |  | CHD Risk12 |
| Adult, 18+ years:Normal: <150 mg/dLBorderline High: 150-199 mg/dLHigh: 200-499 mg/dLVery High: ≥500 mg/dL**Critical Value: >1,000 mg/dL** | Child, 2-9 years:Acceptable: <75 mg/dLBorderline high: 75-99 mg/dLHigh: ≥100 mg/dLChild, 10-17 years:Acceptable: <90 mg/dLBorderline high: 90-129 mg/dLHigh: > or =130 mg/dL |
| Low Density Lipoprotein Cholesterol (LDL), fasting |  | CHD Risk12 |
| Adult, 18+ years:Desirable: <100 mg/dLAbove Desirable: 100-129 mg/dLBorderline high: 130-159 mg/dLHigh: 160-189 mg/dLVery high: ≥190 mg/dL | Child, 2-17 years:Acceptable: <110 mg/dLBorderline high: 110-129 mg/dLHigh: ≥130 mg/dL |
| High Density Lipoprotein Cholesterol (HDL), fasting |  | CHD Risk12 |
| Adult, 18+ years:Males: ≥40 mg/dLFemales: ≥50 mg/dL | Child, 2-17 years:Low: <40 mg/dLBorderline low: 40-45 mg/dLAcceptable: > 45 mg/dL |
| **VLDL** |  |  |  |
| ***Liver Tests*** |  | **Clinical Ranges** |  |
| Alanine Aminotransferase (ALT) |  | 15–65 U/L 5 |  |
| Aspartate Aminotransferase (AST) |  | 5–40 U/L 5 |  |
| γ-Glutamyl Transferase (GGT) |  | Female 5–55 U/LMale 5–85 U/L 5 |  |
| Alkaline Phosphatase (ALP) |  | Female: 50–136 U/LMale: 40–136 U/L 5 |  |
| Albumin (ALB) |  | 3.4–5.0 g/dL 5**Critical Value: <1.5 g/dL 5****Critical Value: >7.9 g/dL 5** |  |
| Total Bilirubin (TBIL) |  | 0.0–1.0 mg/dL 5**Critical Value: >12.9 mg/dL 5** |  |
| Direct Bilirubin (Conjugated Bilirubin) |  | 0.0–0.3 mg/dL 5 |  |
| Cytokeratin 18 M30 (CK-18 M30) |  | No evident liver disease (27-28)M30: <200 U/L and M65: <300 U/LTASH (toxicant associated steatohepatitis; consistent with necrosis)M30: <200 U/L and M65: >300 U/LOther liver disease (consistent with apoptosis)M30: >200 U/L  |  |
| Cytokeratin 18 M65 (CK-18 M65) |  |  |

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