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**Lab Dept:** Chemistry

**Test Name:** PSEUDOCHOLINESTERASE, DIBUCAINE INHIBITION

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***General Information***

**Lab Order Codes:** PSE

**Synonyms:** Dibucaine inhibition; Serum Cholinesterase; Cholinesterase

**CPT Codes:** 82638 – Dibucaine number  
82480 – Cholinesterase; serum

**Test Includes:** Pseudocholinesterase dibucaine inhibition reported as a per cent and pseudocholinesterase, total reported in U/L.

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***Logistics***

**Test Indications:** Useful for identifying patients who are homozygous for the atypical gene and have low levels of pseudocholinesterase (PCHE) which are not inhibited by dibucaine or for identifying patients who are heterozygous for the atypical gene, have lower than normal levels of PCHE, and varying levels of inhibition with dibucaine

**Lab Testing Sections:** Chemistry - Sendouts

**Referred to:** Mayo Medical Laboratories (MML Test: CHED)

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 1 - 2 days

**Special Instructions:** Patient's age and sex are required on floor collected request form for processing. [See Patient Preparation.](#)

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***Specimen***

**Specimen Type:** Blood

**Container:** SST (Gold, marble or red) tube

**Draw Volume:** 3 mL (Minimum: 1.5 mL) blood

<b>Processed Volume:</b>	1 mL (Minimum: 0.5 mL) serum
<b>Collection:</b>	Routine venipuncture
<b>Special Processing:</b>	Lab Staff: Centrifuge specimen, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at refrigerated temperatures. Forward promptly.
<b>Patient Preparation:</b>	For cases of prolonged apnea following surgery, wait 24 hours before obtaining specimen.
<b>Sample Rejection:</b>	Warm specimens: mislabeled or unlabeled specimens

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***Interpretive***

**Reference Range:**

<b>Dibucaine Inhibition:</b>	
Dibucaine Inhibition	70-90%
Congenital deficiency:	18-20%
<b>Total Pseudochoolinesterase:</b>	
Males:	3100 - 6500 U/L
Females:	
<18 years:	not established**
18-49 years:	1800 - 6600 U/L
≥50 years:	2550 - 6800 U/L
<p><b>**Note:</b> It has been reported that at birth and for weeks immediately following, the enzyme levels are low (~50% of adult values). During the next few years, a steady increase is seen with values ~10-15% above adult values by age 6 years. Enzyme values stabilize to adult levels at puberty.</p>	

**Critical Values:** N/A

**Limitations:**

There are some homozygous and heterozygous individuals who are sensitive to succinylcholine although their total pseudocholinesterase values are normal. A dibucaine inhibition test is necessary in order to confirm the presence of the abnormal allele in these individuals.

Dibucaine inhibition is on no value over total pseudocholinesterase in attempting to diagnose organophosphorus pesticide exposure. The same is true in liver disease.

Certain drugs and anesthetic agents may inhibit pseudocholinesterase activity. Therefore, it is recommended that blood specimens be obtained 24 – 48 hours post-operatively on those patients who have experienced prolonged apnea after surgery.

**Methodology:**

Photometric, Acetylthiocholine substrate with dibucaine addition includes pseudocholinesterase, total.

**References:**

[Mayo Medical Laboratories](#) December 2017