

Algometer

Algometers are used as a reliable method of quantifying tissue tenderness (mechanical hyperalgesia).

Before taking a measurement, you may wish to demonstrate the process to the patient by pressing the algometer into the palm of the hand.

Using the Algometer

1. Localize any sensitive areas you wish to measure by gentle but firm palpation.
2. Hold the meter in the palm of your hand between your thumb and index finger.
3. Place the rubber-tipped stylus over the predetermined trigger point or area of palpable tenderness you wish to measure. Make sure the force dial is perpendicular to the skin surface. Stabilize any nodular muscular regions between the middle and index finger of your indifferent hand.
4. Apply steady, gentle pressure at a rate of $1\text{kg}/\text{cm}^2/\text{sec}$. until the patient first feels pain and responds by saying "now."
5. Remove the stylus and record the value and locations of the tender areas in your notes or on a diagram for follow-up examination.

6. Reset the meter prior to taking another reading.

Results/Interpretation

The following three conditions are considered abnormal.

1. Difference in pressure-pain threshold (PPT) between two symmetric points in the same person (e.g., right upper trapezius and left upper trapezius) exceeding $2\text{kg}/\text{cm}^2$.
2. PPT $<3\text{ kg}/\text{cm}^2$.
3. Low PPT values as compared to normal values obtained in pain-free control subjects: Various muscle groups (see Table I) and lumbar spinous processes. (See Table II.)

TABLE I: Abnormal Pressure Thresholds

<u>Muscle</u>	<u>Male</u>	<u>Female</u>
Teres major	4.1	2.7
Upper trapezius	2.9	2.0
Levator scapulae	3.6	2.7
Supraspinatus	3.9	2.8
Infraspinatus	4.6	3.0
Middle deltoid	5.1	3.1
Pectoralis major	3.3	--
Gluteus medius	4.3	3.7
Paraspinals 2cm	5.6	3.8

$$\text{Force in kg} = \frac{\text{Newton} \times 0.102\text{kg}}{\text{Newton}}$$

TABLE II: Normative Values for VRP and PRP Pressure Thresholds for the L-1 Through L-5 Segments and the Overall Average VRP and PRP

<u>Verbal Report of Pain (VRP)</u> (first noticeable pain)						
	<u>Segment</u>					<u>Overall Average</u>
	L-1	L-2	L-3	L-4	L-5	
<u>M</u>	6.7	6.7	6.7	6.8	6.1	6.6
<u>SD</u>	2.1	2.1	1.7	1.9	1.8	1.8
<u>Pain Reaction Point (PRP)</u> (patient reports it "hurts a lot")						
	<u>Segment</u>					<u>Overall Average</u>
	L-1	L-2	L-3	L-4	L-5	
<u>M</u>	8.3	8.3	8.1	8.1	7.3	8.0
<u>SD</u>	2.2	2.2	1.9	1.9	2.2	1.9

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Reeves, J.L., Jaeger, B., Graff-Radford, S.B., Reliability of the Pressure Algometer as a Measure on Myofascial Trigger Point Sensitivity, *Pain*, 1986;24, 313-21.

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