

against strong resistance) and compared with the sound side. Comparative tests of endurance and of coordination are also needed. Muscle injuries alone do not necessarily limit the movements of adjacent joints and these movements may be freely carried out by very weak muscles, or even by gravity alone without muscular participation as in extension of the elbow and in dropping the arm to the side.

EFFECTIVE DATE NOTE: At 62 FR 30237, June 3, 1997, § 4.51 was removed, effective July 3, 1997.

§ 4.52 Muscle damage.

When an operative dissection is made in the area of old gunshot muscle wounds, as for nerve suture, removal of foreign body, excision of ragged scar, etc., the surgeon finds that the anatomical structures are so distorted that it is difficult or impossible to recognize the familiar muscle landmarks. There is intermuscular fusing and binding and obliteration of fascial planes. So-called penniform muscles have a type of structure which permits the maximum cross section of muscle tissues for the space occupied. Most muscles of the extremities are of this type and these muscles often have their parallel aponeurotic sheaths welded together by scar tissue wherever the slanting muscle fibers which normally connect them have been destroyed. The muscle fasciculi are found displaced in direction and their interspaces infiltrated with scar tissue. It is obvious that when these crippled and scar-bound muscles are called on to act with other muscles in a movement they can no longer work smoothly, pulling evenly on their normal insertions, but pull in part against fascial planes and other muscles with which they are fused, so that a part of their force is misdirected. Both strength and endurance must necessarily be impaired, the threshold of fatigue lowered and delicate coordinate movements interfered with. These changes are the real factors in all disabilities residual to healed muscle wounds.

EFFECTIVE DATE NOTE: At 62 FR 30237, June 3, 1997, § 4.52 was removed, effective July 3, 1997.

§ 4.53 Muscle patterns.

Every movement calls into action the muscles necessary for that movement constituting a definite muscle pattern which is invariable for that movement. None of the muscles can be left out of action in performing the movement nor can any other muscle be called into play to execute the movement. Every movement requires full efficiency, the full complement of muscles included in its specific pattern. If one, or more, of the group is injured or destroyed the efficiency of the movement is permanently impaired. It is the distortion of the intricate mechanism of muscle structures, the intermuscular binding, the obliteration of fascial planes and welding of aponeurotic sheaths that results in permanent residual disabilities. The typical symptoms associated with severe muscle injuries are: Fatigue rapidly coming on after moderate use of the affected muscle groups; pain occurring shortly after the incidence of fatigue sensations, the type of pain being that which is characteristic of and normally associated with prolonged severe muscular effort (fatigue-pain); inability to make certain movements with the same degree of strength as before injury; uncertainty in making certain movements, particularly when made quickly. When the subjective evidence in an individual claim appears as the natural result of a pathological condition shown objectively, and particularly when consistent from time of first examination, i.e., when obviously not based upon information given to the claimant by previous examiners or relayed to him or her from the claims file, it will be given due weight.

[43 FR 45349, Oct. 2, 1978]

EFFECTIVE DATE NOTE: At 62 FR 30237, June 3, 1997, § 4.53 was removed, effective July 3, 1997.

§ 4.54 Muscle groups.

Disabilities due to residuals of muscle injuries will be evaluated on the basis laid down in §§ 4.55 and 4.56 and on the type of disability pictures appended to the ratings listed. In the following schemes the skeletal muscles of the body are divided for rating purposes into 23 groups, in 8 anatomical regions:

4 groups for the shoulder girdle, 2 for the arm, 3 for the forearm and hand, 3 for the foot and leg, 3 for the thigh, 3 for the pelvic girdle, 3 for the trunk, and 2 for the neck. The facial muscles will be rated in accordance with interference with the functions supplied by the cranial nerves. Four grades of severity of disabilities due to muscle injuries are here recognized for rating purposes: slight, moderate, moderately severe and severe. The type of disability pictures for these, as set forth in §§4.55 and 4.56, will be a basis for assigning ratings for each of the 23 muscle groups. The type of disability pictures are based on the cardinal symptoms of muscle disability (weakness, fatigue-pain, uncertainty of movement) and on the objective evidence of muscle damage and the cardinal signs of muscle disability (loss of power, lowered threshold of fatigue and impairment of coordination).

[29 FR 6718, May 22, 1964, as amended at 43 FR 45349, Oct. 2, 1978]

EFFECTIVE DATE NOTE: At 62 FR 30237, June 3, 1997, §4.54 was removed, effective July 3, 1997.

§4.55 Principles of combined ratings for muscle injuries.

(a) A muscle injury rating will not be combined with a peripheral nerve paralysis rating of the same body part, unless the injuries affect entirely different functions.

(b) For rating purposes, the skeletal muscles of the body are divided into 23 muscle groups in 5 anatomical regions: 6 muscle groups for the shoulder girdle and arm (diagnostic codes 5301 through 5306); 3 muscle groups for the forearm and hand (diagnostic codes 5307 through 5309); 3 muscle groups for the foot and leg (diagnostic codes 5310 through 5312); 6 muscle groups for the pelvic girdle and thigh (diagnostic codes 5313 through 5318); and 5 muscle groups for the torso and neck (diagnostic codes 5319 through 5323).

(c) There will be no rating assigned for muscle groups which act upon an ankylosed joint, with the following exceptions:

(1) In the case of an ankylosed knee, if muscle group XIII is disabled, it will be rated, but at the next lower level

than that which would otherwise be assigned.

(2) In the case of an ankylosed shoulder, if muscle groups I and II are severely disabled, the evaluation of the shoulder joint under diagnostic code 5200 will be elevated to the level for unfavorable ankylosis, if not already assigned, but the muscle groups themselves will not be rated.

(d) The combined evaluation of muscle groups acting upon a single unankylosed joint must be lower than the evaluation for unfavorable ankylosis of that joint, except in the case of muscle groups I and II acting upon the shoulder.

(e) For compensable muscle group injuries which are in the same anatomical region but do not act on the same joint, the evaluation for the most severely injured muscle group will be increased by one level and used as the combined evaluation for the affected muscle groups.

(f) For muscle group injuries in different anatomical regions which do not act upon ankylosed joints, each muscle group injury shall be separately rated and the ratings combined under the provisions of §4.25.

(Authority: 38 U.S.C. 1155)

[62 FR 30237, June 3, 1997]

EFFECTIVE DATE NOTE: At 62 FR 30237, June 3, 1997, §4.55 was revised, effective July 3, 1997. For the convenience of the user, the superseded text is set forth as follows:

§4.55 Principles of combined ratings.

The following principles as to combination of ratings of muscle injuries in the same anatomical segment, or of muscle injuries affecting the movements of a single joint, either alone or in combination or limitation of the arc of motion will govern the ratings:

(a) Muscle injuries in the same anatomical region, i.e., (1) shoulder girdle and arm, (2) forearm and hand, (3) pelvic girdle and thigh, (4) leg and foot, will not be combined, but instead, the rating for the major group will be elevated from moderate to moderately severe, or from moderately severe to severe, according to the severity of the aggregate impairment of function of the extremity.

(b) Two or more severe muscle injuries affecting the motion (particularly strength of motion) about a single joint may be combined but not in combination receive more than the rating for ankylosis of that joint at an "intermediate" angle, except that with severe injuries involving the shoulder girdle