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UWTSD Sport and Exercise Science Physiological Testing Protocols

Push-up test of Upper Body Muscular Endurance

Taken From:

Lab 27

**Housh, T.J., Cramer, J.T., Weir, J.P., Beck, T.W. and
Johnson, G.O. (2016). Laboratory manual for
Exercise Physiology, Exercise Testing and Physical
Activity. London: Routledge.**

BACKGROUND

Muscular endurance, an important component of physical fitness, describes the ability to perform repeated muscle actions.^{1,2,3} Muscular endurance contributes to our ability to accomplish many activities of daily living, such as gardening, lawn mowing, and shovelling snow. In addition, a number of sports, such as rowing, swimming, wrestling, and many others, require substantial muscular endurance to compete successfully.

The ability to perform repeated muscle actions is specific to the muscle group involved.² For example, depending on training status and/or the competitive sport, an individual may demonstrate considerable upper-body muscular endurance, but display less lower-body or abdominal muscular endurance. Thus, testing procedures are often designed to assess upper-body, lower-body, or abdominal muscular endurance.^{1,2,3}

In this laboratory, you will learn to administer the Push-up Test of Upper-Body Muscular Endurance and to classify the subject based on age and gender.¹



PHOTO 27.1 Up position with arms fully extended and body straight. The hands should be pointed forward and approximately shoulderwidth apart. Male subjects use the toes as the pivot point.



PHOTO 27.2 The subject lowers the body until the chin touches the floor.

KNOW THESE TERMS & ABBREVIATIONS

- muscular endurance = the ability to perform repeated muscle actions

PROCEDURES^{1,2} (see photos 27.1 to 27.4)

1. Have the subject begin in the up position with arms fully extended and body straight. The hands should be pointed forward and approximately shoulder-width apart (see photos 27.1 and 27.3). Male subjects use the toes as the pivot point. Female subjects should assume the “modified knee push-up” position with the knees bent and touching the floor (see photo 27.3).
2. The subject lowers his or her body until the chin touches the floor (see photos 27.2 and 27.4) and then returns to the up position by straightening the elbows.
3. A partner should count the number of push-ups performed correctly to exhaustion without stopping.

- Record the number of correctly performed push-ups on worksheet 27.1.



PHOTO 27.3 Up position with arms fully extended and body straight. The hands should be pointed forward and approximately shoulder-width apart. Female subjects should assume the “modified knee push-up” position with the knees bent and touching the floor.

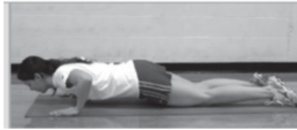


PHOTO 27.4 The subject lowers the body until the chin touches the floor.

Norms for the push-up test of upper body muscular endurance.²

TABLE 27.1

Category	Age (years)									
	20–29		30–39		40–49		50–59		60–69	
GENDER	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Excellent	36	30	30	27	25	24	21	21	18	17
Very good	35	29	29	26	24	23	20	20	17	16
	29	21	22	20	17	15	13	11	11	12
Good	28	20	21	19	16	14	12	10	10	11
	22	15	17	13	13	11	10	7	8	5
Fair	21	14	16	12	12	10	9	6	7	4
	17	10	12	8	10	5	7	2	5	2
Needs improvement	16	9	11	7	9	4	6	1	4	1

Worksheet 27.1 PUSH-UP TEST OF UPPER-BODY MUSCULAR ENDURANCE FORM

Name _____

Date _____

Gender: _____

Age: _____

- Number of consecutive push-ups = _____
- Classification = _____ (see table 27.1)

REFERENCE

- American College of Sports Medicine. *ACSM's Guidelines for Exercise Testing and Prescription*, 9th edition. Baltimore: Wolters Kluwer/Lippincott Williams & Wilkins, 2014.
- Hoffman, J. Norms for Fitness, Performance, and Health. Champaign, IL: Human Kinetics, 2006, pp. 41 and 196.
- Ryan, E. D., and Cramer, J. T. Fitness testing protocols and norms. In *NSCA's Essentials of Personal Training*, eds. R. W. Earle and T. K. Baechle, 2nd edition. Champaign, IL: Human Kinetics, 2004.