BSA-Akademie
Prävention, Fitness, Gesundheit
School for Health Management

Department
Fitness/Individual Training

Course notes
Basic Fitness Trainer

Contents

3 Training management

Learning objectives

After completing the chapter, you will be able to . . .

- name the five steps for optimal training management and apply this process scheme in the practice of fitness- and health-oriented sports,
- explain the aims and objectives of diagnosis in fitness- and health-oriented sports and implement this part of training management appropriately,
- explain the importance of goal setting within training management and set up specific training goals for your customers as part of a training programme,
- explain the specific training science principles for planning and implementing training and apply these steps to fitness- and health-oriented sports,
- explain the importance of analysis/evaluation as part of training management and implement them as part of fitness- and health-oriented sports.

Definition of "training and performance management"

"Performance management is the short-, medium- and long-term coordination of all measures to plan, implement, control, analyse and correct sports training" (Olivier et al., 2008, p. 55).

Training management (also referred to as "performance management") is mainly used to:

- optimise training success (best possible change in performance capacity),
- avoid overreaching or overtraining and the resulting injuries or damage,
- reduce training monotony and therefore the so-called drop-out rate.

Training management involves the targeted change of the current state towards a desired state. To achieve the training management objectives in the best possible way, the whole process is subject to an exact procedure. Therefore, within training management the steps shown in the following diagram are differentiated (with reference to Olivier et al., 2008, pp. 55–57).

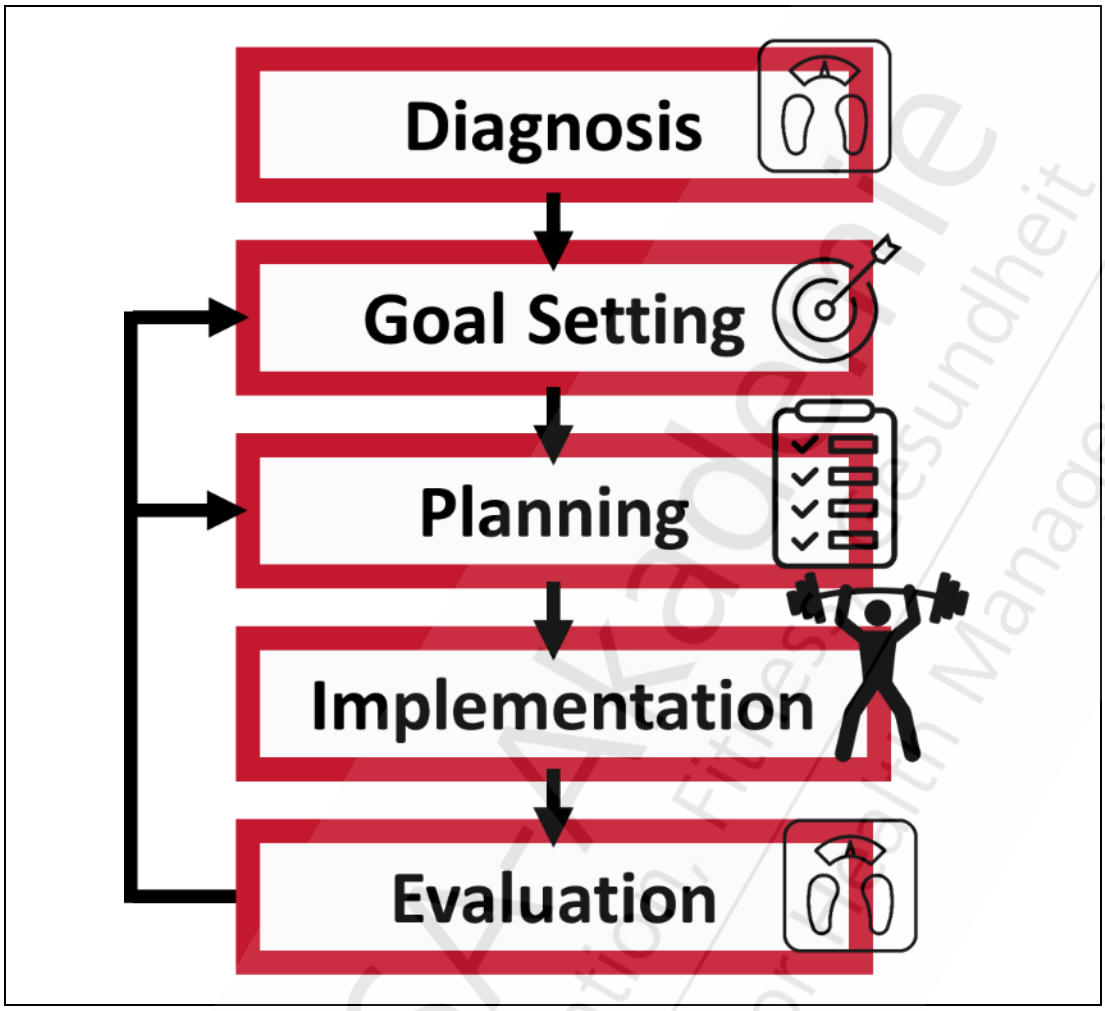

Fig. 18: The five-stage model of training management (©BSA/DHfPG)

3.1 Level 1: Diagnosis

The first stage of training management is diagnosis. In this step, an initial interview and special initial tests (measurement procedures) are used to collect relevant data on the athlete to assess their current performance and health status for the ongoing training management process. It is particularly important to identify risk factors and health problems (Eifler & Schmidt, 2017). The more data is collected, the more objectively and reliably the performance and current health situation of the client can be assessed, and appropriate measures in training planning can therefore be undertaken.

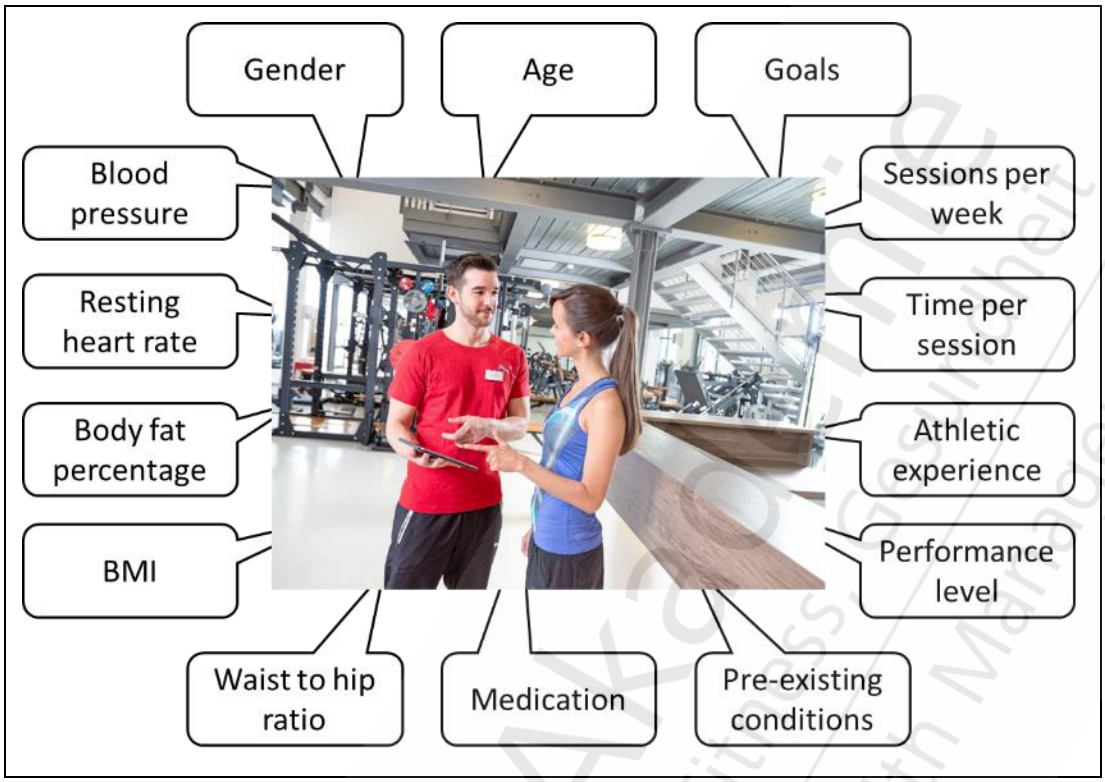

Fig. 19: Important diagnosis parameters (©BSA/DHfPG)

The **initial interview** should as a minimum generate the following data (see Fig. 19):

- General data of the person (e.g. age, gender)
- Training motives and goals
- Time available (training frequency per week and duration of each unit)
- Sporting history (sports previously undertaken, sports currently being undertaken)
- General well-being (own assessment of health and fitness condition)
- Risk factors
- Illnesses
- Health restrictions
- Medication

The **initial tests** are divided into two categories:

- Biometric tests: anthropometric data such as weight, height, body mass index, waist/hip ratio, body fat percentage or body composition and/or other parameters are tested; in addition, key internal health data such as resting heart rate and blood pressure are collected.
- Motor tests: individual characteristics of motor skills are tested, i.e. strength, endurance, flexibility, possibly also coordination tests.

4.1.2 Shoulder joint

The shoulder joint (articulatio humeri) is a ball and socket joint and is comprised of the small glenoid cavity of the shoulder blade and the large articular surface of the upper arm bone (humerus). The two joint surfaces have a 1:4 size ratio (socket: head). This size ratio significantly increases the anatomical mobility of the shoulder joint, which is extremely important for the motor capacities of the upper extremities. At the same time there is no bony stabilisation in this joint, so the primary stabilisation in the shoulder joint must be muscular.
Fig. 79 shows the shoulder blade from a ventral view.

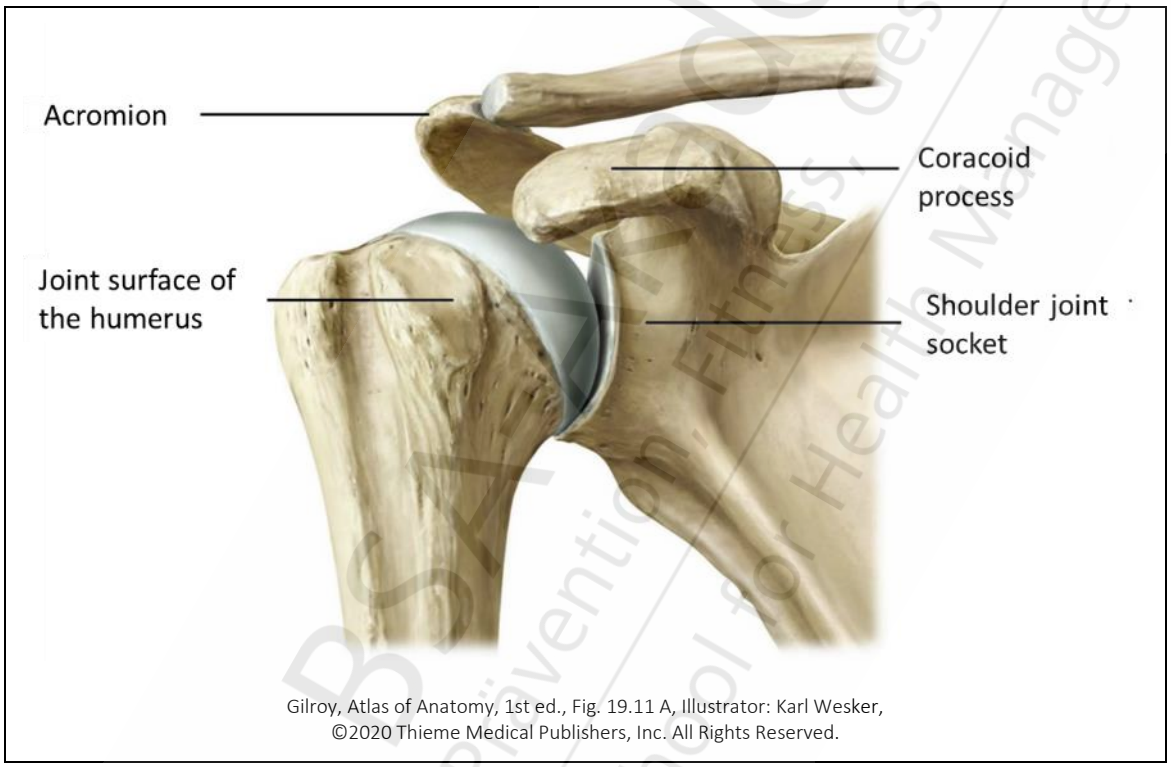

Fig. 79: The shoulder joint – ventral view (©Thieme Medical Publishers, 2020)

Movements of the shoulder joint:
Due to its anatomical structure, the shoulder joint has numerous degrees of freedom. In the shoulder joint, the upper arm head can perform movements around three main axes. Thus, there are six main movements in the shoulder joint:

- Flexion and extension (lifting the upper arm forwards and backwards in the sagittal plane)
- Abduction and adduction (lateral lifting and lowering of the upper arm in the frontal plane)
- External and internal rotation (outward and inward rotation of the upper arm in the horizontal plane)

The following diagrams illustrate the possible movements of the shoulder joint:

- Flexion and extension: Fig. 80
- External rotation and internal rotation: Fig. 81
- Abduction and adduction: Fig. 82

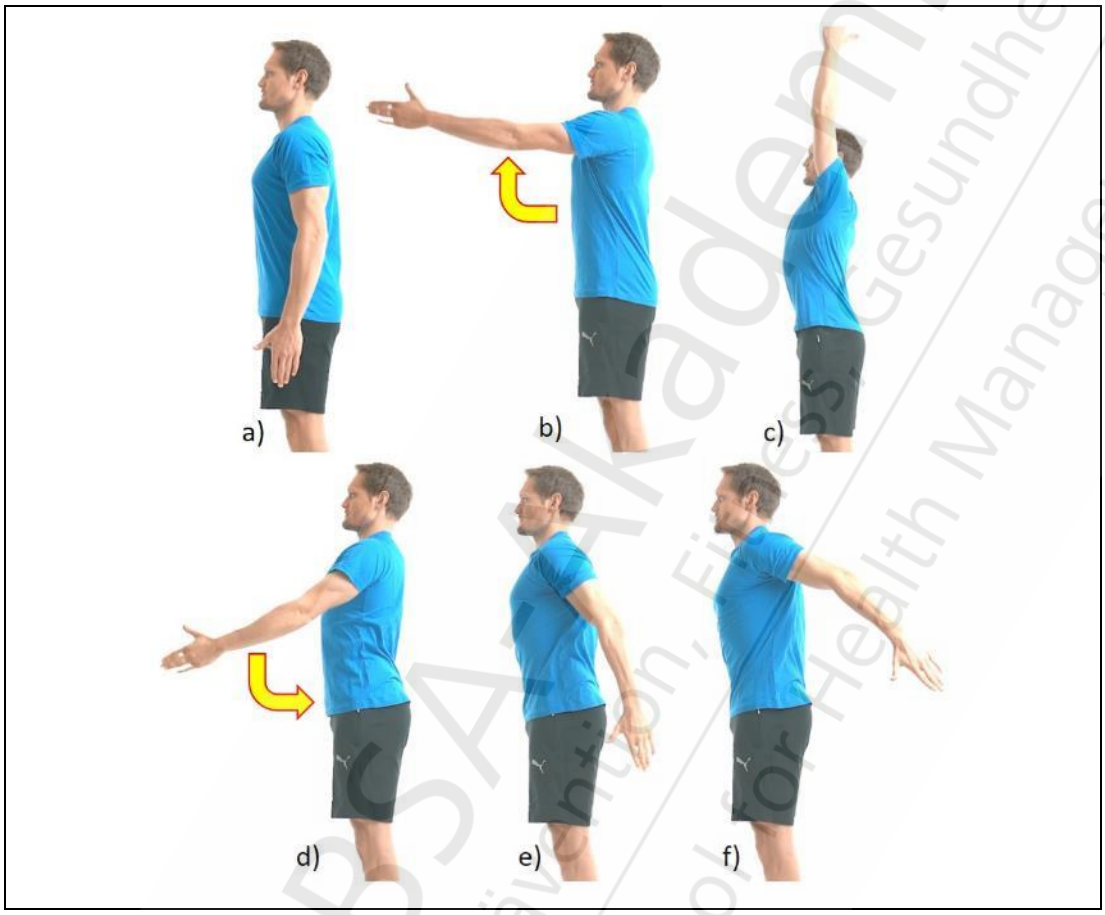

Fig. 80: Movements of the shoulder joint in the sagittal plane: a) neutral position, b) to c) flexion, d) to f) extension (©BSA/DHfPG)

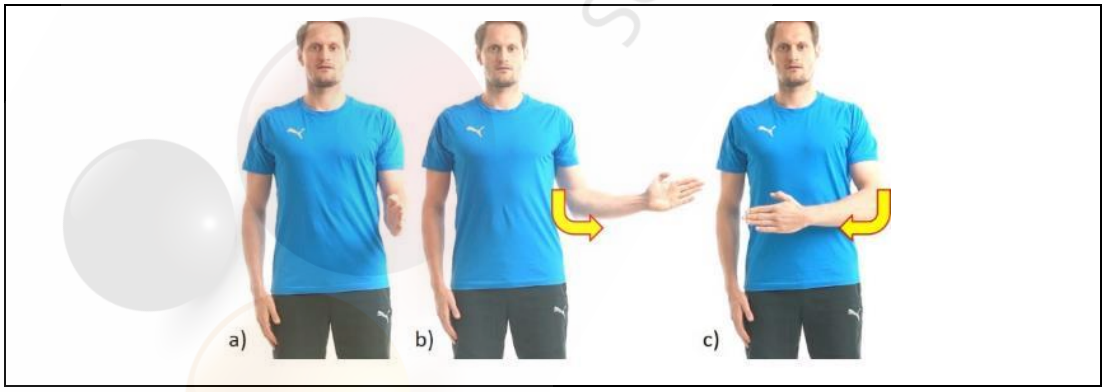

Fig. 81: Movements of the shoulder joint in the horizontal plane: a) neutral position with 90° bend in elbow joint, b) external rotation, c) internal rotation (©BSA/DHfPG)

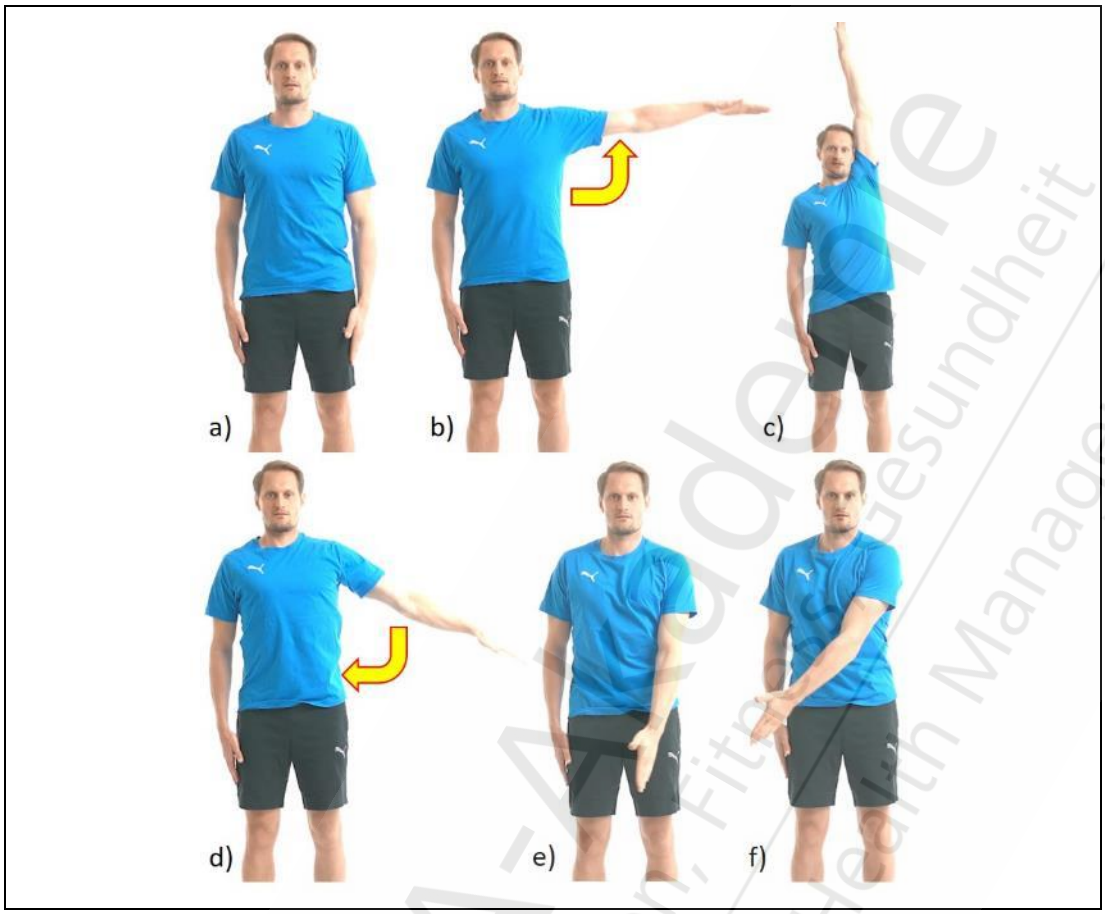

Fig. 82: Movements of the shoulder joint in the frontal plane: a) neutral position, b) to c) abduction, d) to f) adduction (©BSA/DHfPG)

Given these main movements, the various muscles of the shoulder girdle are involved in the movement to differing extents depending on the fibre course and insertion point on the upper arm.

The muscles of the shoulder joint:

The most important muscles that act on the shoulder joint are discussed below. In the interest of didactic reduction, only selected muscles are discussed. The descriptions are therefore not intended to be complete.

Fig. 83 shows the superficial muscles of the shoulder joint from a dorsal view. You can see the deltoid (deltoid-shaped muscle) with its posterior fibre part (pars spinalis). As a result of its biomechanical peculiarities, we present the deltoid in a separate and detailed manner in the further course of this chapter.