



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

# STRENGTH DEVELOPMENT II.

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# Practical realization of strength training:

**7 points**

1. Needs analysis
2. Exercise selection
3. Training frequency
4. Exercise order
5. Training loads and repetitions
6. Volume
7. Rest periods

# 1. Needs analysis

## **Evaluation of the Sports :**

- Body and limb movement patterns and muscular involvement (movement analysis)
- Strength, power, hypertrophy, and muscular endurance priorities (physiological analysis)
- Common sites for joint and muscle injury and causative factors (injury analysis)

## Training status of the Athlete:

- type of training program (sprint, plyometric, resistance, etc.)
- length of recent regular participation in previous training program(s)
- level of intensity involved in previous training program(s)
- degree of **exercise technique experience**

### RESISTANCE TRAINING BACKGROUND

Resistance status	training	Current program	Training age	Frequency (per week)	Training stress	Technique experience and skill
<b>Beginner (untrained)</b>		Not training or just began training	<2 months	$\leq 1-2$	None or low	None or minimal
<b>Intermediate (moderately resistance-trained)</b>		Currently training	2-6 months	$\leq 2-3$	Medium	Basic
<b>Advanced (well resistance-trained)</b>		Currently training	$\geq 1$ years	$\geq 3-4$	High	High

## Example of General Training Priorities by Sport Season

PRIORITY GIVEN TO			
Sport season	Sport practice	Resistance training	Resistance training goal
<b>Off-season</b>	Low	High	Hypertrophy and muscular endurance (initially); strength and power (later)
<b>Preseason</b>	Medium	Medium	Sport and movement specific (i.e., strength, power, or muscular endurance, depending on the sport)
<b>In-season</b>	High	Low	Maintenance of preseason training goal
<b>Postseason (active rest)</b>	Variable	Variable	Not specific (may include activities other than sport skill or resistance training)

## 2. Exercise Selection

**Core exercises** recruit one or more large muscle areas (i.e., chest, shoulder, back, hip, or thigh), involve two or more primary joints (**multijoint exercises**)

**Assistance exercises** usually recruit smaller muscle areas (i.e., upper arm, abdominals, calf, neck, forearm, lower back, or anterior lower leg), involve only one primary joint (**single-joint exercise**)

# 3. Training Frequency

**Training frequency** refers to the number of training sessions completed in a given time period. For a resistance training program, a common time period is one week.

<b>Training status</b>	<b>Frequency guidelines (session per week)</b>
<b>Beginner</b>	<b>2-3</b>
<b>Intermediate</b>	<b>3-4</b>
<b>Advanced</b>	<b>4-7</b>

Split routine:

1.day: Chest, shoulders, triceps

2.day: Lower body

3.day: Back, trapezius, biceps

## Resistance Training Frequency Based on the Sport Season

<b>Sport season</b>	<b>Frequency guidelines (session per week)</b>
<b>Off-season</b>	<b>4-6</b>
<b>Preseason</b>	<b>3-4</b>
<b>In-season</b>	<b>1-3</b>
<b>Postseason (active rest)</b>	<b>0-3</b>



# 4. Exercise order

Exercise order refers to a sequence of resistance exercises performed during one training session.

- **Power, Other Core, Then Assistance Exercises**
- **Upper and Lower Body Exercises (Alternated)**
- **"Push" and "Pull" Exercises (Alternated)**
- **Supersets and Compound Sets**

# 5. Training Load and Repetition

<b>Training goal</b>	<b>Load (%)RM</b>	<b>Goal repetitions</b>
<b>Strength</b>	>85	<6
<b>Power: Single-effort event</b>	80-90	1-2
<b>Power: Multiple-effort event</b>	75-85	3-5
<b>Hypertrophy</b>	67-85	6-12
<b>Muscular endurance</b>	<67	>12

# 6. Volume

**Volume** is to the total amount of weight lifted in a training session

**Repetition-volume** is the total number of repetitions performed during a workout session

Training goal	Goal repetitions	Sets
<b>Strength</b>	<6	<b>2-6</b>
<b>Power: Single-effort event</b>	1-2	<b>3-5</b>
<b>Power: Multiple-effort event</b>	3-5	<b>3-5</b>
<b>Hypertrophy</b>	6-12	<b>3-6</b>
<b>Muscular endurance</b>	>12	<b>2-3</b>

# 7. Rest Period

<b>Training goal</b>	<b>Rest period length</b>
<b>Strength</b>	<b>2-5 minutes</b>
<b>Power: Single-effort event</b>	<b>2-5 minutes</b>
<b>Power: Multiple-effort event</b>	<b>2-5 minutes</b>
<b>Hypertrophy</b>	<b>30 seconds-1.5 minutes</b>
<b>Muscular endurance</b>	<b>≤ 30 seconds</b>



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Thank you for your attention