MUSKELLEISTUNGSDIAGNOSE
MusclePerformanceDiagnosis

- measure - diagnose – optimize performance
Performance development

Create an individual training based on diagnosis

Performance Level

Muscle Performance Diagnosis

Controlling

Individual Training

81%

→ to control and increase performance level
**Ski-jumping Olympic Champion**

1. Low results show exhaustion of body because of training extensity

2. **analysis**
   - Individual Training
   - Stability
   - Power
   - Agility

3. **analysis:** increase extensity

4. **analysis:** training was straining the body – reduce weight training

5. **analysis:** change training for efficiency in speed and force

6. **analysis:** reduce muscular strength – needs effective recovery strategy

- Reaches his absolute top level and maintains it

- Power without any weight
- Power with +20% of own body weight
- Power with +40% of own body weight

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**Performance development - example**
Bob Weltklasse-Starter!  
“war schon seit 4 Jahren im Spitzensport und konnte sich innerhalb einer Saison um 30% steigern”

herkömmliches Training – über Lasten u. Umfang
Umstellung auf dynamisches Krafttraining  
exakte Steuerung vermeidet Überlastung
erreicht zu Saisonbeginn Toplevel
Icehockey-Pro/Sweden! “ein typischer “schleichender” Überlastungs-
zustand, der kaum erkannt wird aber zu
großen Leistungseinbußen führt”

Injury prevention

- Measurement of muscle imbalance = early warning of potential injury

- Vulnerability to injury:
  Functional abnormalities result in structural stress that cause injury
  MPD can detect inflammation or worsening of preexisting damage before it can be clinically diagnosed

- Progression of rehabilitation
  After an injury is the athlete game ready? – Is he performance ready?
**Injury prevention - example**

Soccer Player, whom was fouled at previous game

Status Monday after the game:
- Force distribution 13% abnormality;
- Power 43 W/kg;
- Intervention: recovery training + Feedback training with MPD + Physiotherapie

Status Thursday:
- Force distribution 6% abnormality;
- Power 51 W/kg;
- Ready for next game
“nur durch die Früherkennung der Reizung konnte eine eine längere Verletzungspause verhindert werden”

Vorbereitungsphase – gute Leistungsentwicklung

Leistungsabfall wegen Patellarreizung – Assymetrie -12%
Performance control - Profile

- **accurate test analysis of each athlete**

- **Readiness**
  How fit is the athlete?
  Is the athlete able to perform at ultimate/peak level?

- **Regeneration**
  Is sufficient time allowed to recover/regenerate?

- **Training efficiency**
  Is the athlete training at optimal intensity/extent?

- **Health**
  Is the athlete rundown, sick or over-trained?
Coach assistance – Team control

Measurement categories – used as decision support
Who is best in form? Who is today's best? Who is game ready?

- Power
- Readiness
- Strength
- Recovery
- Health
- Possibility of injury
MPD - Practice

Implementation of Muscle Performance Diagnostic:

- Minimal test time - 15 min. per athlete
- Transportable – easily set-up
- Testing possible before each training session
- Immediate scientific test results
MPD – Core Competencies

- Test – Evaluate – create individual training programs
- Supervised training sessions
- Detailed report of Athlete’s performance and development
- Scientific support system
- Exact monitoring of the athletes
- Reduction of injuries and medical costs
- Exclusivity