

EFSSMA / DGSP

Leipzig 09.11.2019

- European Federation S Initiative pro Motion
for physical Activity:

where are we going ??

Sports cardiology , EFSMA ... and the Future

- Genomics
Diagnostic: Detection of talents for top athletes with DNA - analysis for sports specific selection, besides muscle biopsies **Crispr CAS 9** (?) (JAMA318,2017:699)
(Review:Joshi PK,Nature Com,2017)
- **Ethical aspects, there are ethical statements (?)**
- **Declaration of Geneva 2017**
- **Risk analysis**: Inherited diseases: cardiomyopathies, electrical diseases. (chanellopathies),vascular dis. (e.g.aorta), when to do DNA -analysis,
- **Analysis** of phenotype and genotype, examination of family members ,near relatives,
- **Detection of doping** (Y.Pitsiladis ?)

To do list

- Actualization of Ethical Code for EFSMA (**Who will do ?**)
- Checklists for detection of cardiology occult diseases (**ready, done**)
- Do we need a statement for genetic diagnostic in athletes? (open)
- Questions of digitisation and documentation by all national federations (e.g. support by R.Abaecherli) **List are done, we need conversion into algorithms.**
- Do we need **multicenter studies** ? Yes, but initiated by national institutes of sports medicine. Do we have a **list of those institutes?**
- Invite them to Portoroz? **Newsletter** for EFSMA

Digitization in Sports Medicine: Urgent call for action

- **e-Card** for athletes (see Australian athletes)
- **One common sheet for documentation** of history, phys. examination for all European federations suitable for PC scanning, additional modules as necessary for special medical questions (**done**)
- **In digital form : ECG and Exercise ECG**, with software for interpretation (FT1), suitable for transfer by internet and central server **to be done, partially done in Ljubljana**)
- **Collection of all data on a central server** in one or two institutes of (epidemiology) in sports medicine for prospective analyses or studies, resp.

Digitization (II)

- E-health: App's, Mobile Phone, Platform
- Includes **telemedicine**, **wearables**, quality control of apps and wearables (who ??) , together with WT Company
- **e-gaming statement ?**
- **Counseling** in complex cardiological or pneumolog. findings via internet (as has been installed in Slovenia)
- **Must be activated and distributed to all national federations (similar activity in Germany, in prep.)**
- Algorithms for calculations of V02 max and calculations of training recommendations (based on age, gender, BMI etc. and calculation of % of Vo2max(as given in the tables) (**done**) **need of PC program**
- **Development of AI in sports medicine**

Personalisation in Sports Medicine

e.g. Training and Lifestyle Recommendations

- Algorithms (Formulas) for calculation of FITT data using (from EFSMA tables, **tables done**):
- Age, gender, BMI, waist circumference, kind and severity of disease, exercise capacity ($\dot{V}O_2\text{max}$, max work load, estimated max WL or physical capacity resp.) (**done**)
- Use automatic calculated results for FITT recommendations, can be done by a physician's assistant
(with precise exam (verification) by the doctor)
writing (automatically) exercise prescription for health
Must be evaluated and done by ... ?



Exercise prescription for Health

Special recommendation for prevention and in diseases

Tables for physician's desk

Training recommendation for prevention and therapy in diseases (© EFSMA)

General recommendations: Warming up about 3 to 5 min, cooling down 3 – 5 min, flexibility training daily

(For Borg-Scale or RPE – Scale, Abbreviations, Kind of sports, and HITT: High intensity interval training see below)

	Frequency/Week	Intensity	Time (duration)	Type of training	Type of sports	Strength training
<p>Prevention in general</p> <p>© EFSMA</p>	<p>Low intensity: 5/week</p> <p>Vigorous intensity: 3/week</p>	<p>Low intensity: 40–65 % HRmax RPE 10-13</p> <p>Vigorous intensity: 65-85 % HRmax RPE > 13-16</p>	<p>Low intensity: > 30min/session or 150min/week</p> <p>Vigorous intensity: > 25/min/session or 75min/week</p>	Endurance, strength.	Running, walking, cycling, swimming, skating, cross-country ski.	70 % of 1RM > 2-3/week, 10-15 reps, 1- 3 sets.
<p>Coronary heart disease</p> <p>© EFSMA</p>	<p>3–5/week</p> <p>Vigorous intensity: 3/week</p>	<p>50–80 % V_O₂max or 40-70 % HRmax RPE 12–15</p> <p>maybe:HITT*</p>	<p>40-60 min/session</p> <p>Low intensity: < 30 min</p> <p>Vigorous intensity: > 20 min/session</p> <p>HITT* : see below</p>	Endurance, strength.	Running, walking, cycling, swimming.	60-75 % of 1RM, > 2/week, 8–12 reps, 2-3 sets.

(Zupet P,Löllgen H; www.efsma-scientific.eu)

Sports Physician as Consultant in Hospital (with UEMS ?)

Cocking,S.,2017, Thijssen et al.,JAMA Cardio.2017

- **Preconditioning:** IPC : Ischemic preconditioning by muscle mass occlusion by cuffs and by training

But: Preconditioning not only for athletes, but more for patients e.g.

- **Preoperative** in cardiac surgery or other interventions, cuff technic but also exercise training (before bypass surgery)

- **Training counseling** for in-patients and training recommendation by exercise prescription for patients after hospital discharge

for all disciplines of medicine.

Hospital discharge : Exercise prescription for health by use of FITT data besides prescription of drugs

Current Deficite Challenge for the future :
Insufficient **Discharge letter** when pts. leave the Hospital
(- Physical Activity, Lifestyle Recommendation -)

e.g.: Hospital :STEMI (Stent impl.)

Lisinopril 2x 5 mg
Bisoprolol 5 mg
Aspirin 100 mg
Prasugel 2x 5 mg
Statin 20 mg

z.B. Reha- Clinic (Hypertension, Obesity, CAD)

...
... Wir empfehlen regelmäßige körperliche Betätigung, Überprüfung der der kardiovaskulären Risikofaktoren, weitere regelmäßige Blutdruckkontrollen, ...

Medikation:

L-Thyroxin 150 1-0-0
Concor 5 : 1-0-0
Delix plus 5/25: 1-0-0
Delix 5 : 0 – 0-1
Corvaton 8 : 0- 0- 0 -1
ASS 100: 0-0-1
Zodin:1-0-1
Locol 40: 0-0-1
Moxonidin: 0.3 : 1- 0 -1 (neu)
Aldactone 50 : 1-0-0
Rasilez 150 : 1-0-0 (neu)

Proposal by Sports Medicine

Regular Physical Acitivity

Frequency : 3 – 4 / week

Intensity: Borg 11- 13

Heart rate 105 - 120

Time (session): 30 – 45 min

Type: Endurance (walking, running, cycling, swimming, dancing

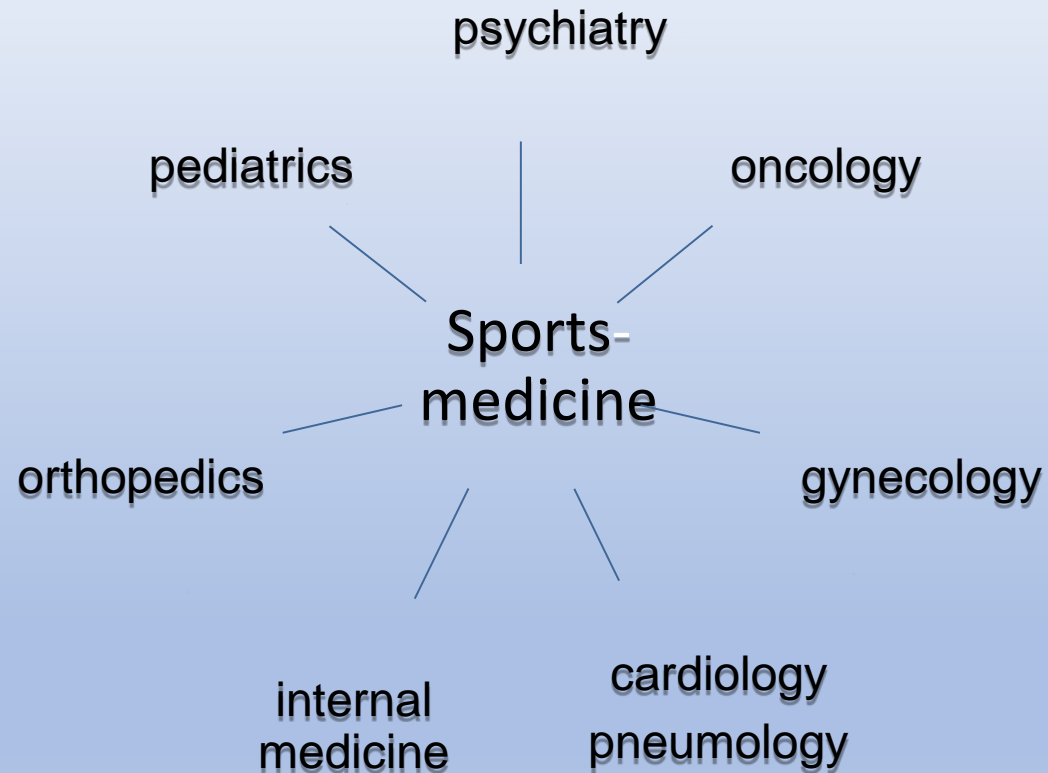
Diet : ergometry, treadmill

Drugs :1. 2.



Sports Medicine: Mother of Movement and Exercise Science and Practice

Cooperation of sports medicine with other specialties,
in hospital **consultations by sports physician** for **specialities**



Sports Medicine and Medical Specialities

- Joint Sessions at congresses between EFSMA and other specialities (open the congress for other specialities)
- Special courses /seminars (1 – 2 days) in “central Europe” with key issues central topics like ECG, echocardiography or : **sports medicine** for . . . (see below)
- EFSMA >>> and <<< CKD, psychiatry, neurology ,oncology, cardiology, diabetes, orthopedics, pediatrics etc.
- **Larger meeting** : Role of sports medicine, exercise medicine, physical activity and other specialities (e.g. lung diseases gynecology, hypertension, metabolic diseases etc.
- **and** Behavioral Medicine : **Motivation** etc. for counseling etc.
- Ethics in sports medicine (see above) see also HEPAS meetings
- H.Löllgen, EFSMA Hasselt, und Cascais 2017

Statements on Sports Medicine

- Part of in hospital activity and consultation (support by UEMS)
- Maybe : Consultancy with hospital, weekly round!!
- **Some more activities**
- Beside publication we need actions (NB):
- A certification for all centers which are doing
PPS and EPH under our guidelines with identical sheets
and formulars with central storage and evaluation
Include younger sports physicians from all countries, e.g. Latvia
and
Baltic sports medicine fed. By S& E commission. Need money for
that.

European Guideline for Physical Activity (2018)

90 % prepared, must be completed.

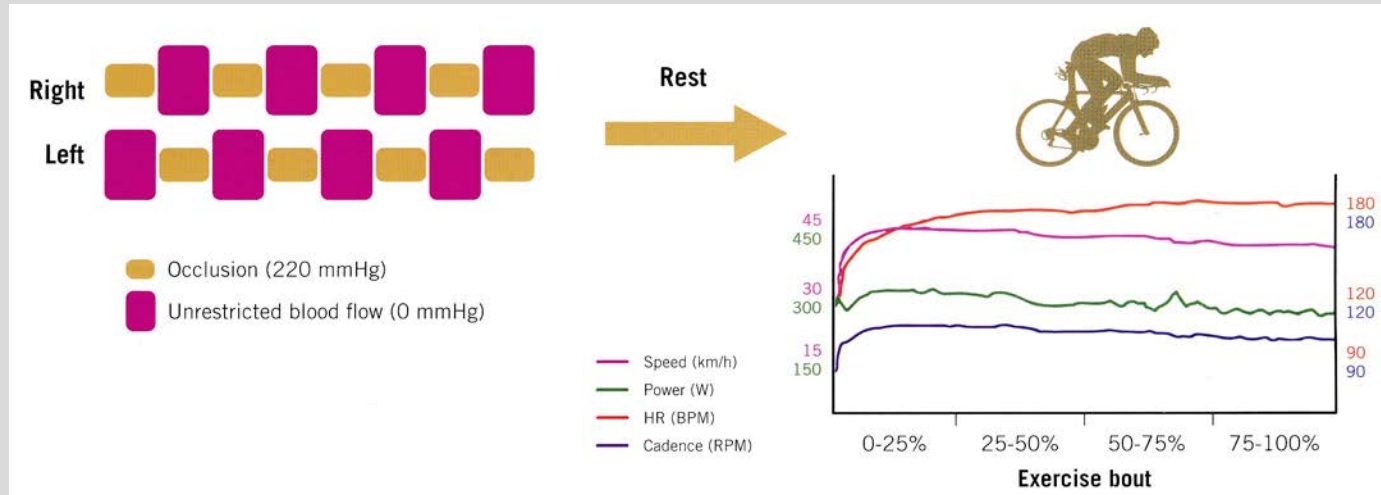
<u>European Guideline for Physical Activity</u>		First draft, HL
by EFSMA		06.08.2015
Short history	to be done	
Ethics charta	done	
Definitions	done (see below) NB	
Epidemiology	to be done (has been prepared HL)	
Inactivity (frequency, effects)		
Sedentary lifestyle („screen time)		
Physical activity		
Physiology (short)	to be done (HL and NB)	
Molecular physiology		
Training vs. Fitness		
Athlete's heart		
Dose-response effect	prepared	
Somatic effects (Heart, Metabolic etc.)	„	
Psychosomatic effects	„	
Quality of life	to be done	
Life expectancy	„	
Individual intervention		
PPE	done	
Training recommendations	done (PZ)	
Populations based interventions	done (HL)	
Side effects	done	
Contraindications	done	
Perspectives		
Wearable technology	to be done	
WHO,HEPA, EFSMA, USA (AASM ;ACSM, AHA, ACC)		
European approach, ISCA,		
e-learning	to be done	
Cooperation with other specialities (Internal Med.,Cardiology, neurology ,pneumology ,pediatrics etc.)	to be done (NB, P Scho)	

for S&E Commission and executive comm.

Another Topic for Sports Medicine ???
E-Gaming is not a sport discipline Statement ?



Ischemic Pre-Conditioning in Athletes: Laboratory experiments in Patients: see Thijssen et al., JAMA Cardiol. 2018



In patients with Angina pectoris: positive effects by cuff occlusion.

In cardiac surgery depts.: Ergometer training the days before OP Monitoring by Sports Physician ??

Need for randomized studies!!