

Sportující dítě

pohled dětského kardiologa

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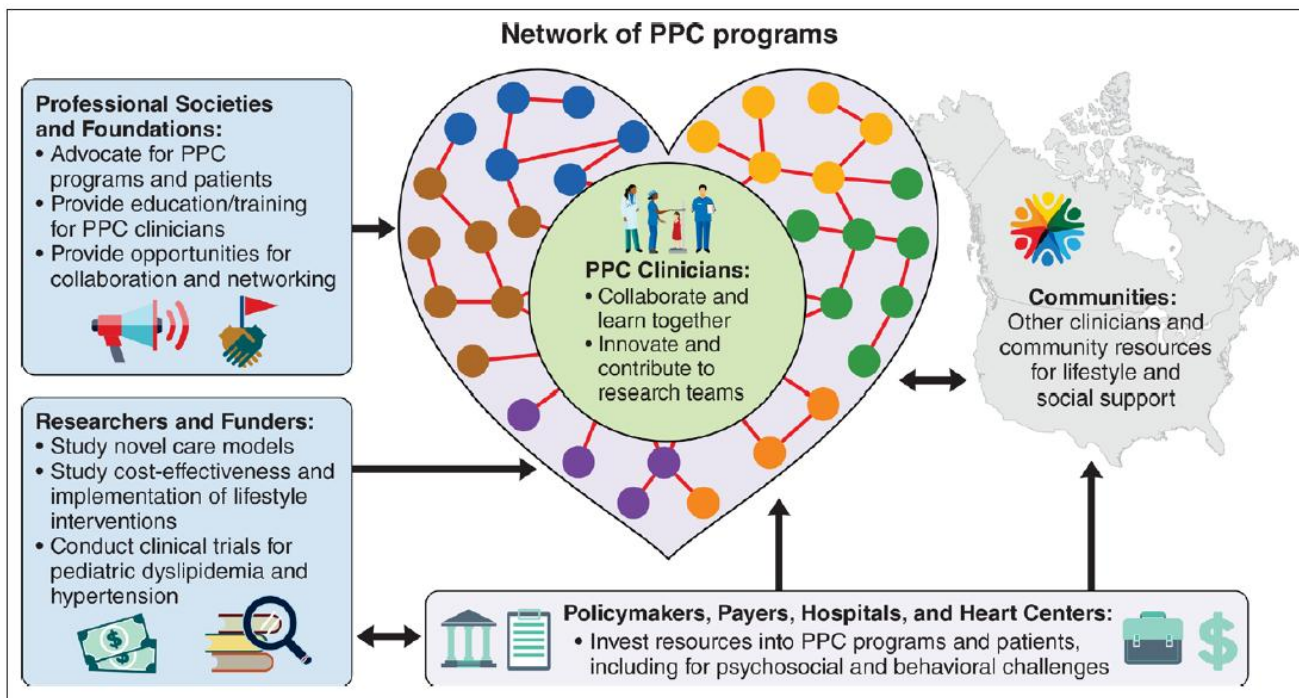
„... exercise and sports are a central experience of childhood and are essential for a normal physical and mental development.“

World Health Organization (WHO 2019, 5–17 Years)

- At least 60 min of moderate to vigorous physical activity daily, >60 min provide additional health benefits. Most physical activity should be aerobic.
- Vigorous-intensity activities at least 3 days/week
- Activities that strengthen muscle and bone.

Toward a Roadmap for Best Practices in Pediatric Preventive Cardiology: A Science Advisory From the American Heart Association

Perak A.M. et al, *Circulation* 2023



Cardiovascular Health Promotion in Children: Challenges and Opportunities for 2020 and Beyond

A Scientific Statement From the American Heart Association

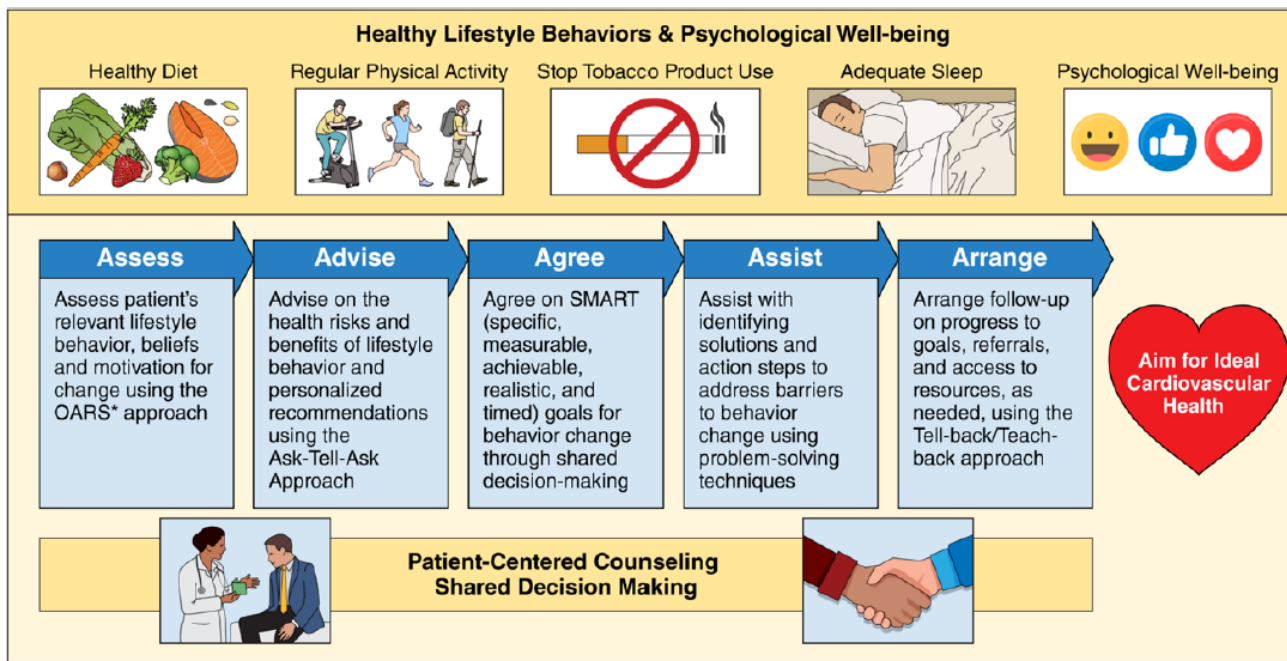
Steinberger J. et al, Circulation 2016

Table 1. Poor, Intermediate, and Ideal Definitions: Health Metrics in Children and Adolescents

Metric	Poor	Intermediate	Ideal
Smoking status	Tried >30 d ago	...	Never tried; never smoked whole cigarette
BMI	>95th percentile	85th–95th percentile	<85th percentile
Physical activity level	None	>0 and <60 min/d moderate or vigorous activity every day	≥60 min/d moderate or vigorous activity every day
Healthy Diet Score*	0–1 components	2–3 components	4–5 components
Total cholesterol	≥200 mg/dL	170–199 mg/dL	<170 mg/dL
Blood pressure	>95th percentile	90–95th percentile	<90th percentile
Fasting blood glucose	≥126 mg/dL	100–125 mg/dL	<100 mg/dL

Strategies for Promotion of a Healthy Lifestyle in Clinical Settings: Pillars of Ideal Cardiovascular Health

Kris-Etherton P.M. et al, Circulation 2021

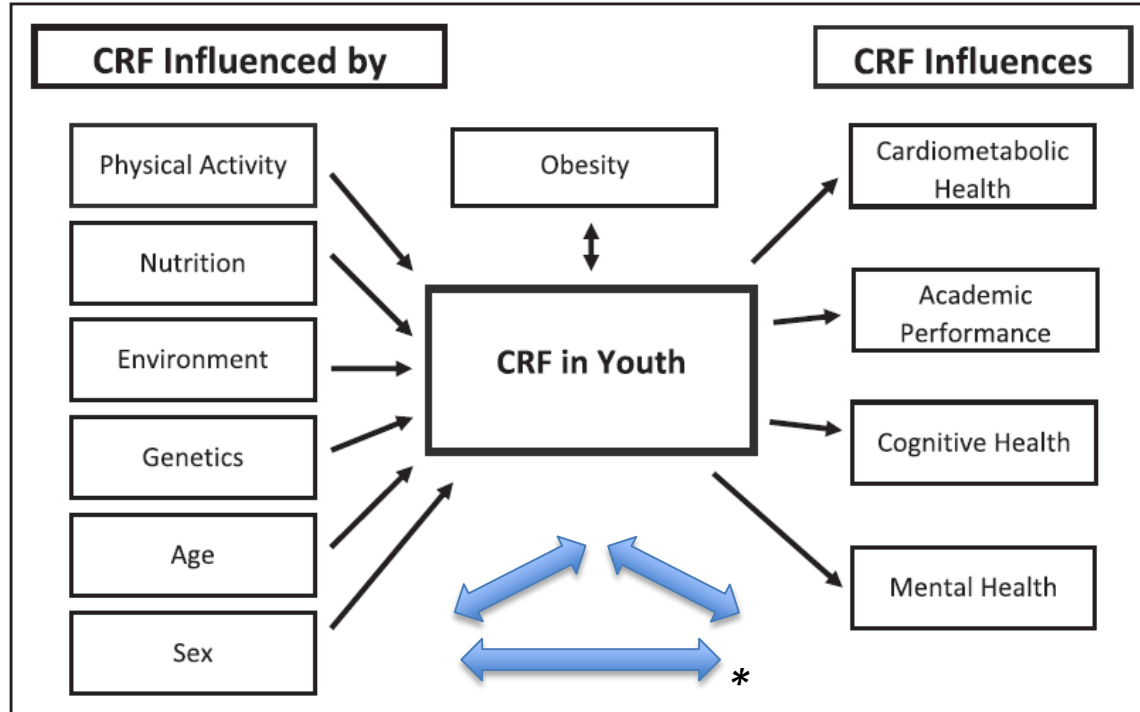


The 5A Model for lifestyle-related behavior change counseling in clinical settings.

Cardiorespiratory Fitness in Youth: An Important Marker of Health

A Scientific Statement From the American Heart Association

Raghuveer G et al, *Circulation* 2020



* PK

Exercise Intolerance

Scott Owens; Bernard Gutin

Pediatr Rev (2000) 21 (1): 6–9.

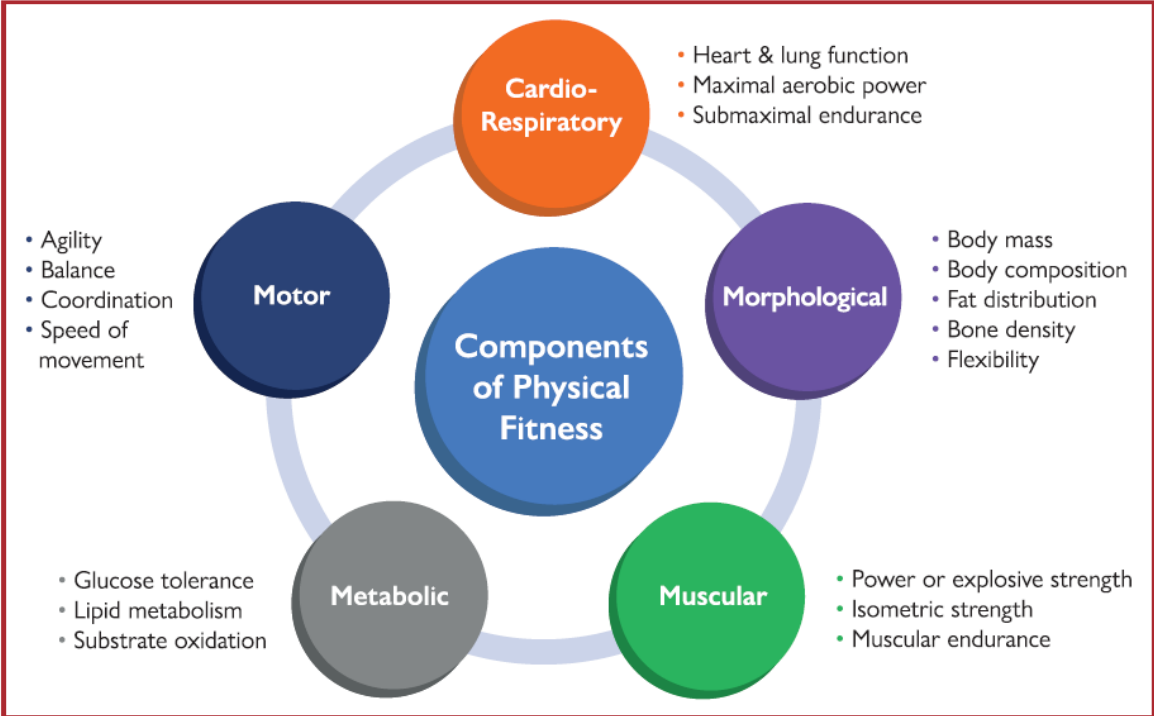
„...individuals whose responses to the challenges of exercise fail to achieve levels considered normal for their age and gender“



„... in children associated with dysfunctions of the pulmonary, cardiovascular and neuromuscular systems, although psychogenic and behavioral causes also place large numbers of children at risk“

2020 ESC Guidelines on sports cardiology and exercise in patients with cardiovascular disease

Pellicia A, Sharma S et al., EHJ 2021

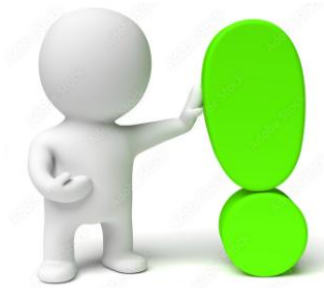


Specifika sportujícího dítěte

- Komplexní pohled na vyvíjející se organismus
 - úzká spolupráce s PLDD a TVL
- Častěji zastoupena vrozená kardiální onemocnění
 - často nikoli fyzicky limitující, ale mohou se projevit z plného zdraví



Varovné příznaky



- cítím se „normálně“
- dýchá se mi jinak dobře
- není bolest na hrudi



- porucha vědomí
- bolest/tlak/dyskomfort na hrudi
- neustupující dušnost
- abnormální bušení srdce
 - opakované/chronické potíže
 - abnormální únava, pocení, změny barvy kůže
 - nauzea/zvracení



Symptoms May Not Be Present...and It's Hard to Screen for Everything

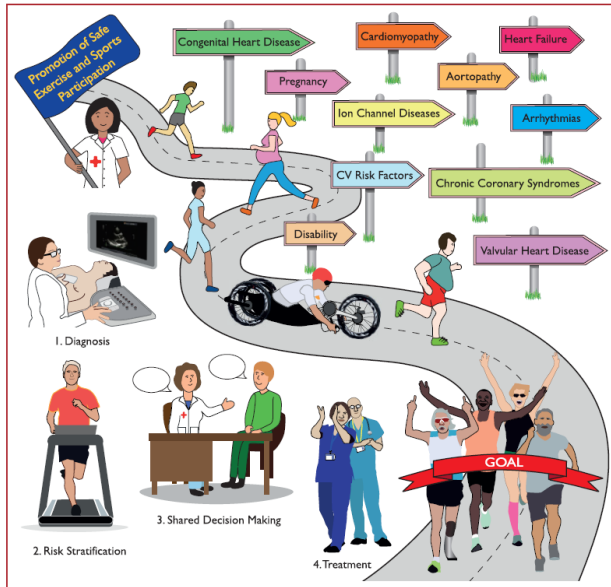
„...but every athlete should certainly see a provider with knowledge at least annually. Those with specific concerns can benefit from seeing a cardiologist.“

„...worthy of emphasis is emergency preparedness for athletes, coaches, trainers, parents, and spectators.“



2020 ESC Guidelines on sports cardiology and exercise in patients with cardiovascular disease

The Task Force on sports cardiology and exercise in patients with cardiovascular disease of the European Society of Cardiology (ESC)



DIAGNÓZA



RIZIKOVÁ STRATIFIKACE



ROZHODNUTÍ



LÉČBA

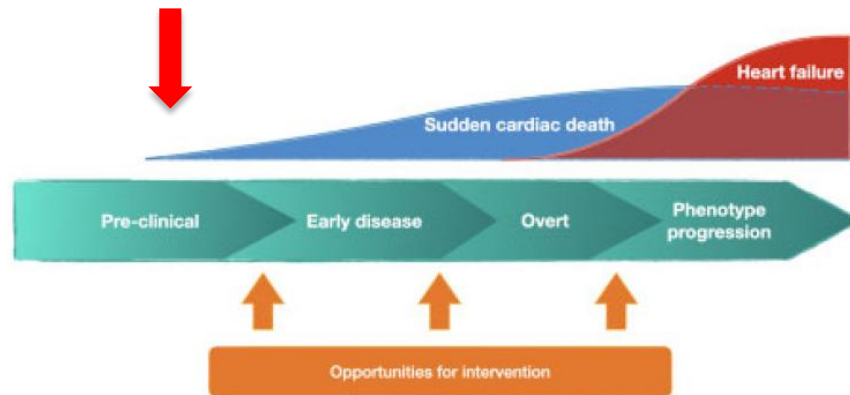
NEDOSTATEČNÁ EVIDENCE

- bezpečná míra zátěže u kardiomyopatií

- práh poškození organismu při dlouhodobé intenzivní sportovní aktivitě

Diagnostické výzvy

- Intermittentní fenotyp
 - LQTS, WPW
- Hraniční ECHO/EKG nález
 - Fyziologická adaptace?
 - Atletické srdce
- Postupně se rozvíjející fenotyp
 - kardiomyopatie



Precision medicine

X

One-size-fits-all

Správná intervence u správného pacienta a ve správnou dobu

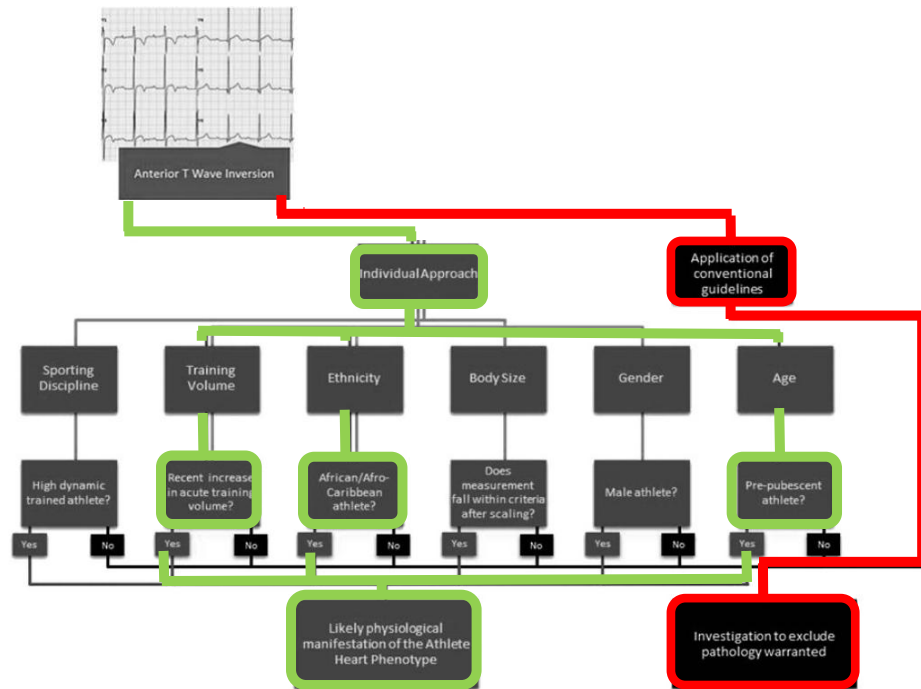


Figure. The multifactorial impact of cardiac adaptation in the athlete.

Athletes with channelopathy may be eligible to play

Panhuyzen-Goedkoop NM, Wilde AAM, Neth Heart J 2018

- „Normální“ hodnoty?
 - QTc 500 ms?
- Prostor pro kompromis?
 - Typ sportu
 - Režimová opatření
 - Dehydratace, hypertermie, iontová dysbalance
 - Emergency action plan/AED
- **G+/F-** (\pm NSS v rodině)
 - Volně (\pm betablokátory u CPVT)

**Eligibility and Disqualification Recommendations for
Competitive Athletes With Cardiovascular Abnormalities:**

**Task Force 3: Hypertrophic Cardiomyopathy,
Arrhythmogenic Right Ventricular Cardiomyopathy
and Other Cardiomyopathies, and Myocarditis**

A Scientific Statement From the American Heart Association
and American College of Cardiology

Maron BJ et al, Circulation 2015

„...there will always be tolerance in the system for some degree of flexibility, individual responsibility, and choice in making these decisions for individual student athlete-patients.“

Toward a Long and Happy Life of a Patient With Genetic Heart Disease*

Susan P. Etheridge, MD,^a Elizabeth V. Saarel, MD^{b,c}

„...the days of a paternalistic model for health care decisions are long gone, and patients now expect to be included in medical decision-making“

Return to play with hypertrophic cardiomyopathy: are we moving too fast? A critical review

J. A. Drezner et al, Br J Sports Med 2021

„...shared decision-making in sports cardiology involves a complex discussion of risk that **must balance scientific evidence, clinical uncertainty, patient autonomy and concerns from all parties.**“

Contacts



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