

# Sporten met een hartprobleem: 'Zoveel als mogelijk', door een advies op maat

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**ESC**  
European Society  
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ESC GUIDELINES

## 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)**

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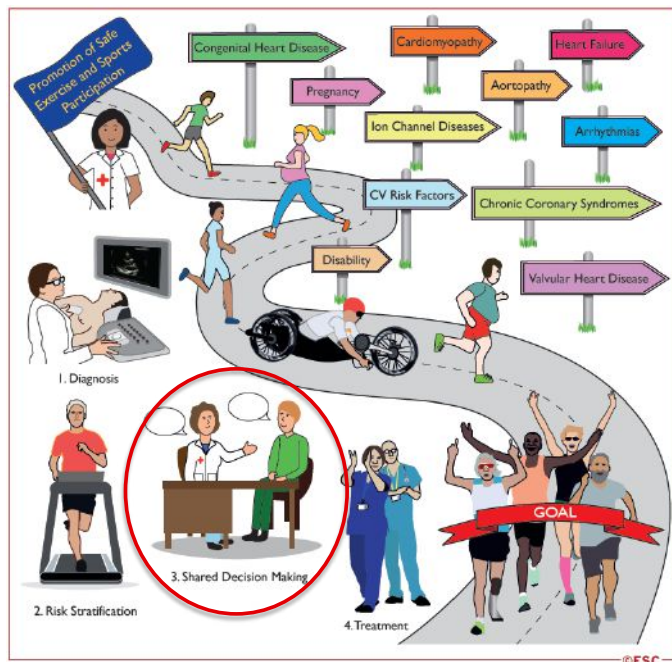
The infographic depicts a winding path leading to a 'GOAL' banner. Along the path, various cardiovascular conditions are listed in colored boxes: Congenital Heart Disease, Cardiomypathy, Heart Failure, Pregnancy, Aortopathy, Ion Channel Diseases, Arrhythmias, CV Risk Factors, Chronic Coronary Syndromes, Disability, and Valvular Heart Disease. The path is divided into four stages: 1. Diagnosis (showing a doctor and patient), 2. Risk Stratification (showing a person on a treadmill), 3. Shared Decision Making (showing a doctor and patient in a consultation), and 4. Treatment (showing a person in a wheelchair and a person running). A signpost at the beginning of the path reads 'Promotion of Safe Exercise and Sports Participation'.

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## Sports & cardiovascular disease:

### Framework of considerations

1. Exercise has undeniable benefits for all cardiovascular patients.
2. Prevent sudden deterioration during sports (often life-threatening arrhythmias).
3. Symptom control during sports.
4. Impact of sports on the progression of the underlying condition.



2020 ESC Guidelines on Sports Cardiology. Pelliccia, Sharma et al. Eur Heart J 2021

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## Individualised sports recommendations

	Skill	Power	Mixed	Endurance						
	Golf (buggy)	Shot puttr (recreation)								
	Golf (18 holes/Walking)	Discus (re)			<b>Intensity</b>	$VO_{2max}$ (%)	$HR_{max}$ (%)	HRR (%)	RPE Scale	Training Zone
	Table Tennis (double)	Alpine Ski			Low intensity, light exercise <sup>a</sup>	<40	<55	<40	10–11	Aerobic
	Table Tennis (single)	Short dist			Moderate intensity exercise <sup>a</sup>	40–69	55–74	40–69	12–13	Aerobic
	Shooting	Discus			High intensity <sup>a</sup>	70–85	75–90	70–85	14–16	Aerobic + lactate
	Curling	Alpine Ski			Very high intense exercise <sup>a</sup>	>85	>90	>85	17–19	Aerobic + lactate + anaerobic
	Bowling	Judo/karat								
	Sailing	Weight lift								
	Yachting	Wrestling								
	Equestrian	Boxing								

■ Low intensity    ■ Medium intensity    ■ High intensity    ■ Triathlon

RPE: rate of perceived exertion (Borg scale)  
13 = 'somewhat hard'

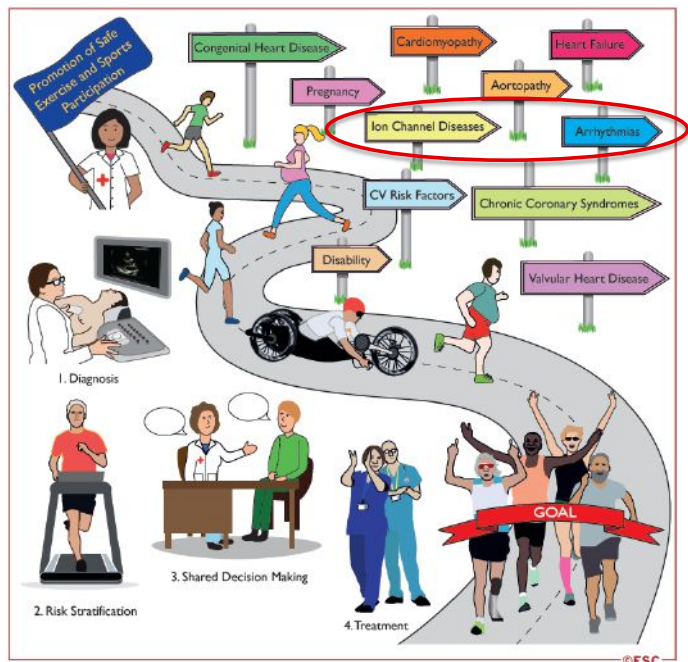
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## As an example: atrial fibrillation



1. Exercise has undeniable benefits for all cardiovascular patients.

#### Recommendations

At least 150 minutes per week of moderate intensity, or 75 minutes per week of vigorous intensity aerobic exercise or an equivalent combination thereof is recommended in all healthy adults.

A gradual increase in aerobic exercise to 300 minutes per week of moderate intensity, or 150 minutes per week of vigorous intensity aerobic exercise, or an equivalent combination is recommended for additional benefits in healthy adults.

Class	Level
I	A
I	A

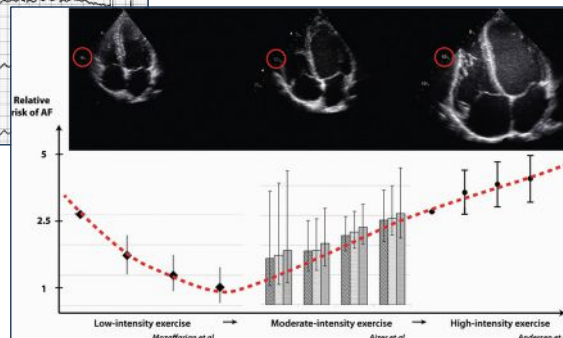
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## As an example: atrial fibrillation



1. Exercise has undeniable benefits for all cardiovascular patients.
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La Gerche & Schmier, Eur Heart J 2013

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## As an example: atrial fibrillation



1. Exercise has undeniable benefits for all cardiovascular patients.
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### Recommendations

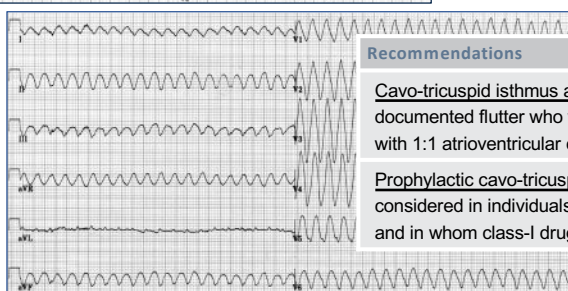
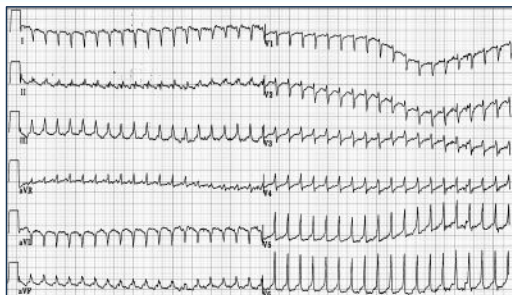
Counseling about the effect of long-lasting intense sports participation on (recurrence of) AF is recommended in individuals with AF who exercise vigorously for prolonged periods, especially in middle-aged men.

### Class Level

Class	Level
I	B

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## As an example: atrial fibrillation



Flutter with 1-to-1 atrio-ventricular conduction

1. Exercise has undeniable benefits for all cardiovascular patients.
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### Recommendations

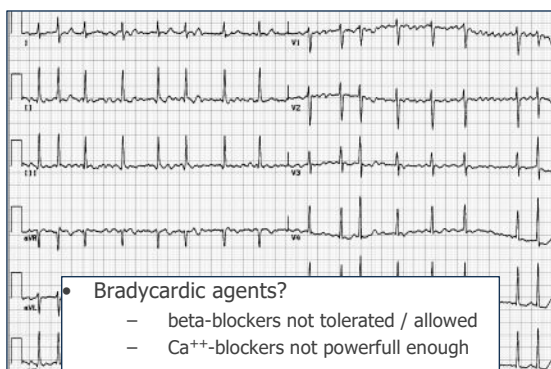
Cavo-tricuspid isthmus ablation should be considered in those with documented flutter who want to engage in intensive exercise, to prevent flutter with 1:1 atrioventricular conduction.

Class	Level
Ila	C
Ila	C

Prophylactic cavo-tricuspid isthmus ablation to prevent flutter should be considered in individuals with AF who want to engage in intensive exercise and in whom class-I drug therapy is initiated.

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## As an example: atrial fibrillation

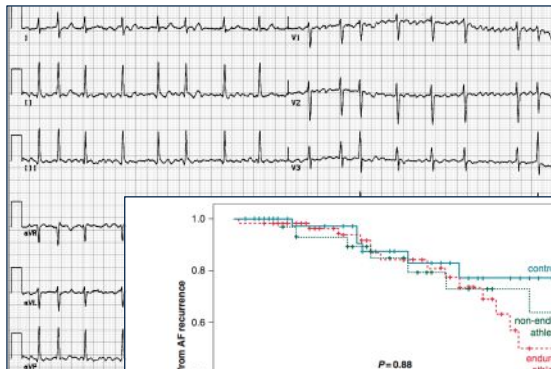


- Bradycardic agents?
  - beta-blockers not tolerated / allowed
  - Ca<sup>++</sup>-blockers not powerful enough
- Anti-arrhythmic drugs?
  - prognostic concern
- AAD + bradycardic agents?
  - not proven safer
  - not tolerated
  - not effective

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## As an example: atrial fibrillation



Pulmonary vein isolation (PVI)

Koopman et al, EP Europace 2011

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### Recommendations

**AF ablation** is recommended in exercising individuals with recurrent, symptomatic AF, and/or in those who do not want drug therapy given its impact on athletic performance.

Class	Level
I	B

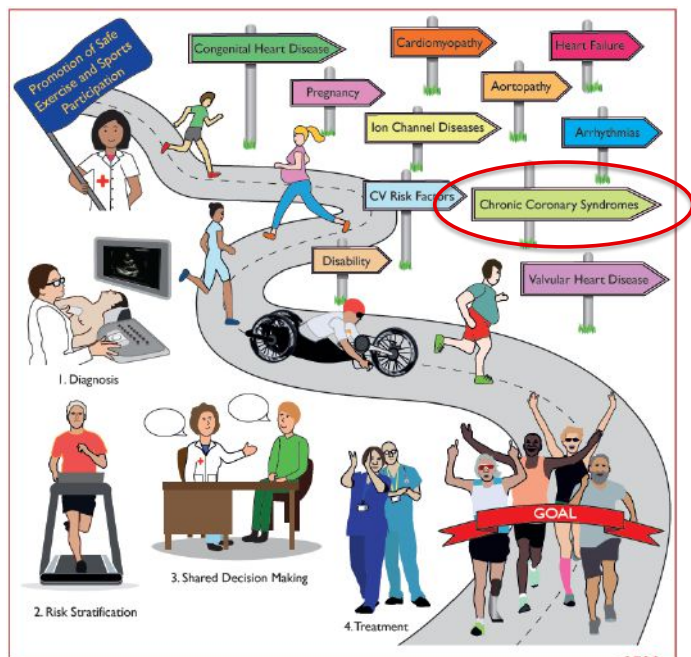


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## Sports & cardiovascular disease:

### Framework of considerations

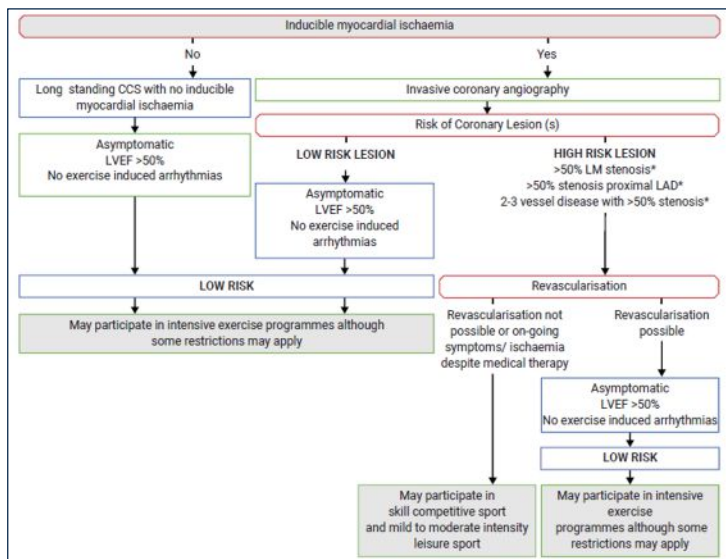
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## Coronary heart disease and sports participation



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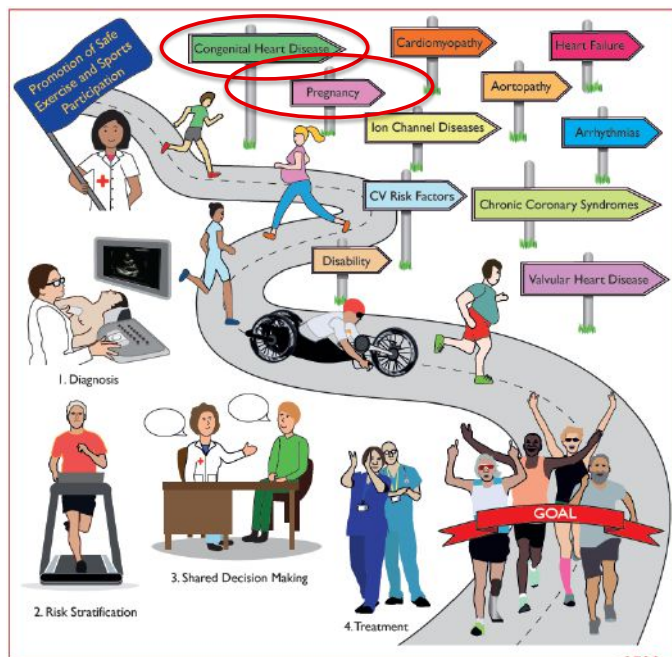


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## Sports & cardiovascular disease:

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# Congenital heart disease and/or pregnancy and sports participation

1. Ventricles	No systolic dysfunction No hypertrophy No pressure load No volume load	No systolic dysfunction No hypertrophy Mild pressure load Mild volume I	Mild systolic dysfunction Mild hypertrophy Single ventricle physiology Systemic right ventricle	Moderate systolic dysfunction Moderate hypertrophy Moderate pressure load	Severe systolic dysfunction Severe hypertrophy Severe pressure load Moderate/severe volume load
2. Pulmonary artery pressure	Low pulmonary artery pressure	Low pulmonary artery pressure	Mildly elevated pulmonary artery pressure		Moderately/severely elevated pulmonary artery pressure
3. Aorta	No/mild dilatation	Moderate dilatation	Severe dilatation	Dilatation approaching indication for repair	
4. Arrhythmia	No arrhythmia	No arrhythmia	Mild arrhythmic burden Non-malignant arrhythmia		Significant arrhythmic burden Malignant arrhythmia
5. Saturation at rest/during exercise	No central cyanosis	No central cyanosis	No central cyanosis	Central cyanosis	

	A	B	C	D	E
When all applicable	When at least one applicable			When at least one applicable	
Static component of sport	Up to high static	Up to moderate static			Low static
Relative intensity of sport	<b>HIGH INTENSITY</b> RPE Borg scale: 15-17 Training HR: 75%-90% of achieved HR during CPET		<b>MODERATE INTENSITY</b> RPE Borg scale: 13-14 Training HR: 60%-75% of achieved HR during CPET		<b>LOW INTENSITY</b> RPE Borg scale: 11-12 Training HR: <60% of achieved HR during CPET

Solid lines indicate recommendations; if option for sports with high static component, reduce intensity (dotted lines)

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## UZA Adult Congenital Heart Disease & Pregnancy Cardiovascular Clinic



Prof. An Van Berendonck



Prof. Emeline Van Craenenbroeck



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## Huisartsensymposium 2021 Universitair Cardiologisch Netwerk Antwerpen (UCNA)

Mede namens de ganse staf UZA en alle UCNA cardiologen

Dank u!



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