¿Qué papel juega el cardiólogo pediátrico en las enfermedades con riesgo cardiovascular?

José Manuel Siurana
Cardiología. Hospital HM Nens

Patologías que aumentan el riesgo CV en la infancia

Factores de riesgo tradicionales:

- Dislipemia
- HTA
- Obesidad
- Insulinorresistencia

Enfermedades sistémicas:

- Diabetes Mellitus tipo 1 y 2
- Enfermedad renal crónica
- Enfermedad de Kawasaki
- Enfermedades inflamatorias crónicas (AIJ, LES, enfermedad inflamatoria intestinal, VIH)
- Cáncer infantil (post-tratamiento)

Cardiopatías congénitas

Category	Condition
High risk	Homozygous FH, T2DM, end-stage renal disease, T1DM, Kawasaki disease with persistent aneurysms, solid-organ transplant vasculopathy, childhood cancer survivor (stem cell recipient)
Moderate risk	Severe obesity, heterozygous FH, confirmed hypertension, coarctation, Lp(a), predialysis CKD, AS, childhood cancer survivor (chest radiation)
At risk	Obesity, insulin resistance with comorbidities (dyslipidemia, NAFLD, PCOS), white-coat hypertension, HCM and other cardiomyopathies, pulmonary hypertension, chronic inflammatory conditions (JIA, SLE, IBD, HIV), s/p coronary artery translocation for anomalous coronary arteries or transposition of the great arteries, childhood cancer (cardiotoxic chemotherapy only), Kawasaki disease with regressed aneurysms (zMax ≥5)

de Ferranti, Urbina et al. Circulation. 2019 Mar 26;139(13):e603-e634.

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 MAY 19, 2022 VOL. 386 NO. 20

Childhood Cardiovascular Risk Factors and Adult Cardiovascular Events

D.R. Jacobs, Jr., J.G. Woo, A.R. Sinaiko, S.R. Daniels, J. Ikonen, M. Juonala, N. Kartiosuo, T. Lehtimäki, C.G. Magnussen, J.S.A. Viikari, N. Zhang, L.A. Bazzano, T.L. Burns, R.J. Prineas, J. Steinberger, E.M. Urbina, A.J. Venn, O.T. Raitakari, and T. Dwyer

International Cohort: Australia, Finland and USA.

42.324 participantes de 3-19 años. Seguimiento durante 35 años.

Variables analizadas en la infancia → **BMI, systolic blood pressure, cholesterol total, triglycerids and youth smoking.**

Variables analizadas en la edad adulta → Eventos CV Fatales y No-fatales (IAM, ictus, angina, enfermedad arterial periférica, intervención carotídea, aneurisma abdominal).

Edad media visita: **11,8 años.**

Edad media eventos CV: 47 años.

Total de eventos: 319 fatales y 779 no-fatales.

Riesgo mayor de eventos fatales:

- **Combined-risk z score** (mean of z score) (OR 2.71)
- **Youth smoking** (OR 1.61)
- **Hipertriglyceridemia** (OR 1.5).

También se observa mayor riesgo entre participantes con high-normal or high-acceptable categories for the body-mass index, systolic blood pressure, and triglyceride level.

Niños con Combined-risk z score ≥0 tienen **2-9 veces mayor riesgo** de presentar eventos CV en la edad adulta que aquellos niños con Combined-risk z score <−0.5.

Table 2. Hazard Ratios for Adult Cardiovascular Events According to Childhood, Adult, or Childhood plus Adult Risk Scores.*

Variable	Hazard Ratio (95% CI)†	
	Fatal Event	Fatal or Nonfatal Event
Childhood risk factor		
Youth smoking: yes vs. no	1.61 (1.21–2.13)	1.70 (1.49–1.93)
z Score for body-mass index	1.44 (1.33–1.57)	1.45 (1.38–1.53)‡
z Score for systolic blood pressure	1.34 (1.19–1.50)	1.33 (1.24–1.42)
z Score for ln(triglycerides)	1.50 (1.33–1.70)	1.45 (1.34–1.56)
z Score for total cholesterol level	1.30 (1.14–1.47)	1.31 (1.22–1.42)
Combined-risk z score§	2.71 (2.23–3.29)	2.75 (2.48–3.06)‡

Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents: Summary Report

- AF de enfermedades CV (familiares de primer grado: hombres <55 años y mujeres <65 años)
- Dislipemia en los padres
- Paciente con factores de riesgo CV
- Patología de Alto Riesgo

→ 1ª analítica a 1-4 años

→ 2ª analítica a 5-9 años

Screening universal en el niño sano

→ 1ª analítica a 9-11 años

→ 2ª analítica a 17-21 años

3. INTEGRATED CARDIOVASCULAR HEALTH SCHEDULE

Risk Factor	Age					
	Birth to 12 mo	1–4 y	5–8 y	9–11 y	12–17 y	18–21 y
Family history of early CVD	—	At 3 y, evaluate family history for early CVD: parents, grandparents, aunts/uncles, men ≤55 y old, women ≤65 y old; review with parents and refer as needed; positive family history identifies children for intensive CVD RF attention	Update at each nonurgent health encounter	Reevaluate family history for early CVD in parents, grandparents, aunts/uncles, men ≤55 y old, women ≤65 y old	Update at each nonurgent health encounter	Repeat family-history evaluation with patient
Tobacco exposure	Advise smoke-free home; offer smoking-cessation assistance or referral to parents	Continue active antismoking advice with parents; offer smoking-cessation assistance and referral as needed	Obtain smoke exposure history from child Begin active antismoking advice with child	Assess smoking status of child; active antismoking counseling or referral as needed	Continue active antismoking counseling with patient; offer smoking-cessation assistance or referral as needed	Reinforce strong antismoking message; offer smoking-cessation assistance or referral as needed
Nutrition/diet	Support breastfeeding as optimal to 12 mo of age if possible; add formula if breastfeeding decreases or stops before 12 mo of age	At age 12–24 mo, may change to cow's milk with 2% percentage of fat decided by family and pediatric care provider; after 2 y of age, fat-free milk for all; juice ≤4 oz/d; transition to CHILD-1 diet by the age of 2 y	Reinforce CHILD-1 diet messages	Reinforce CHILD-1 diet messages as needed	Obtain diet information from child and use to reinforce healthy diet and limitations and provide counseling as needed	Review healthy diet with patient
Growth, overweight/ obesity	Review family history for obesity; discuss weight-for-height tracking, growth chart, and healthy diet	Chart height/weight/BMI; classify weight-by BMI from age 2 y; review with parent	Chart height/weight/BMI and review with parent; BMI ≥ 85th percentile, crossing percentiles: Intensify diet/ activity focus for 6 mo; if no change: RD referral, manage per obesity algorithms BMI ≥ 95th percentile, manage per obesity algorithms	Chart height/weight/BMI and review with parent and child; BMI ≥ 85th percentile, crossing percentiles: Intensify diet/activity focus for 6 mo; if no change: RD referral, manage per obesity algorithms; BMI ≥ 95th percentile: manage per obesity algorithms	Chart height/weight/BMI and review with child and parent; BMI ≥85th percentile, crossing percentiles: intensify diet/activity focus for 6 mo; if no change: RD referral, manage per obesity algorithms; BMI ≥ 95th percentile, manage per obesity algorithms	Review height/weight/BMI and norms for health with patient; BMI ≥ 85th percentile, crossing percentiles: intensify diet/activity focus for 6 mo; if no change: RD referral, manage per obesity algorithms; BMI ≥ 95th percentile, manage per obesity algorithms
Lipids	No routine lipid screening	Obtain FLP only if family history for CVD is positive, parent has dyslipidemia, child has any other RFs or high-risk condition	Obtain FLP only if family history for CVD is positive, parent has dyslipidemia, child has any other RFs or high-risk condition	Obtain universal lipid screen with nonfasting non-HDL = TC − HDL, or FLP: manage per lipid algorithms as needed	Obtain FLP if family history newly positive, parent has dyslipidemia, child has any other RFs or high-risk condition; manage per lipid algorithms as needed	Measure 1 nonfasting non–HDL or FLP in all: review with patient; manage with lipid algorithms per ATP as needed
BP	Measure BP in infants with renal/urologic/cardiac diagnosis or history of neonatal ICU	Measure BP annually in all from the age of 3 y; chart for age/ gender/height percentile and review with parent	Check BP annually and chart for age/gender/height: review with parent; workup and/or management per BP algorithm as needed	Check BP annually and chart for age/gender/height: review with parent, workup and/or management per BP algorithm as needed	Check BP annually and chart for age/gender/height: review with adolescent and parent, workup and/or management per BP algorithm as needed	Measure BP: review with patient; evaluate and treat per JNC guidelines
Physical activity	Encourage parents to model routine activity; no screen time before the age of 2 y	Encourage active play; limit sedentary/screen time to ≤2 h/d; no TV in bedroom	Recommend MVPA of ≥1 h/d; limit screen/sedentary time to ≤2 h/d	Obtain activity history from child: recommend MVPA of ≥1 h/d and screen/sedentary time of ≤2 h/d	Use activity history with adolescent to reinforce MVPA of ≥1 h/d and leisure screen time of ≤2 h/d	Discuss lifelong activity; sedentary time limits with patient
Diabetes	—	—	—	Measure fasting glucose level per ADA guidelines; refer to endocrinologist as needed	Measure fasting glucose level per ADA guidelines; refer to endocrinologist as needed	Obtain fasting glucose level if indicated; refer to endocrinologist as needed

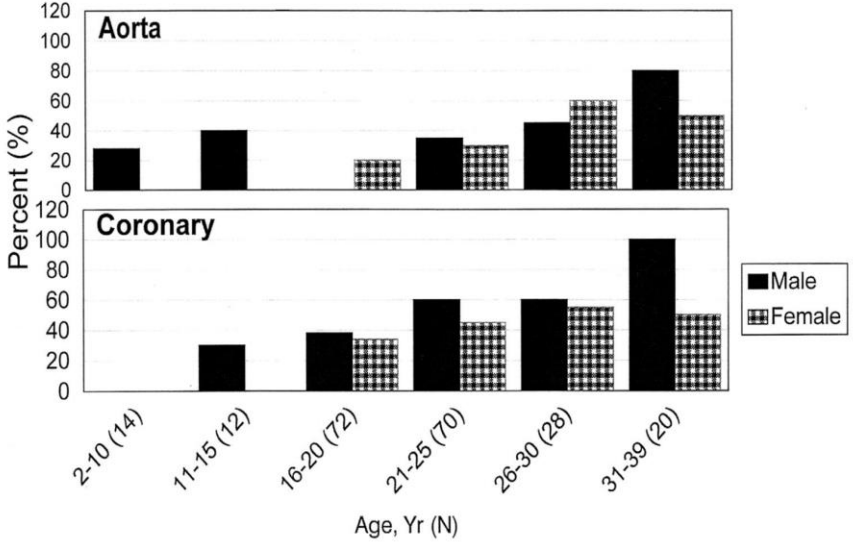
All algorithms and guidelines in this schedule are included in this summary report. RF indicates risk factor; RD, registered dietitian; ATP, Adult Treatment Panel III ("Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults"); JNC, Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure; MVPA, moderate-to-vigorous physical activity; ADA, American Diabetes Association.
The full and summary reports of the Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents can also be found on the NHLBI Web site (www.nhlbi.nih.gov).

Pediatrics. 2011 Dec;128 Suppl 5(Suppl 5):S213-56.

Arteriosclerosis

Historia natural:

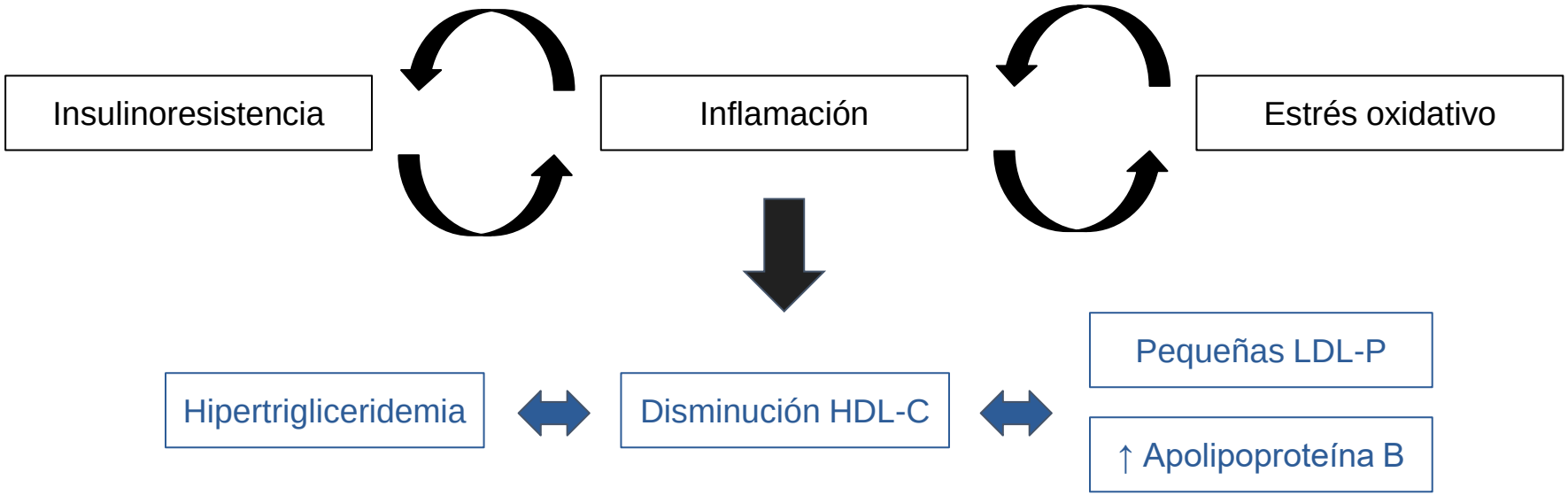
- Inicio en la primera infancia pero síntomas en edad adulta.
- Localización en pared posterior arterial cerca de bifurcaciones.
  - Pared aórtica primera localización (1er año de vida).
  - Pared carotídea (≥2 años)
  - Arterias coronarias (≥10 años).
- Correlación moderada (R=0.45) entre lesiones en pared aórtica y pared coronaria en jóvenes. Asociación entre grosor de pared aórtica y riesgo de eventos CV futuros (HR: 1.28).



Skilton et al. J. Clin. Med. 2019;8:1201.

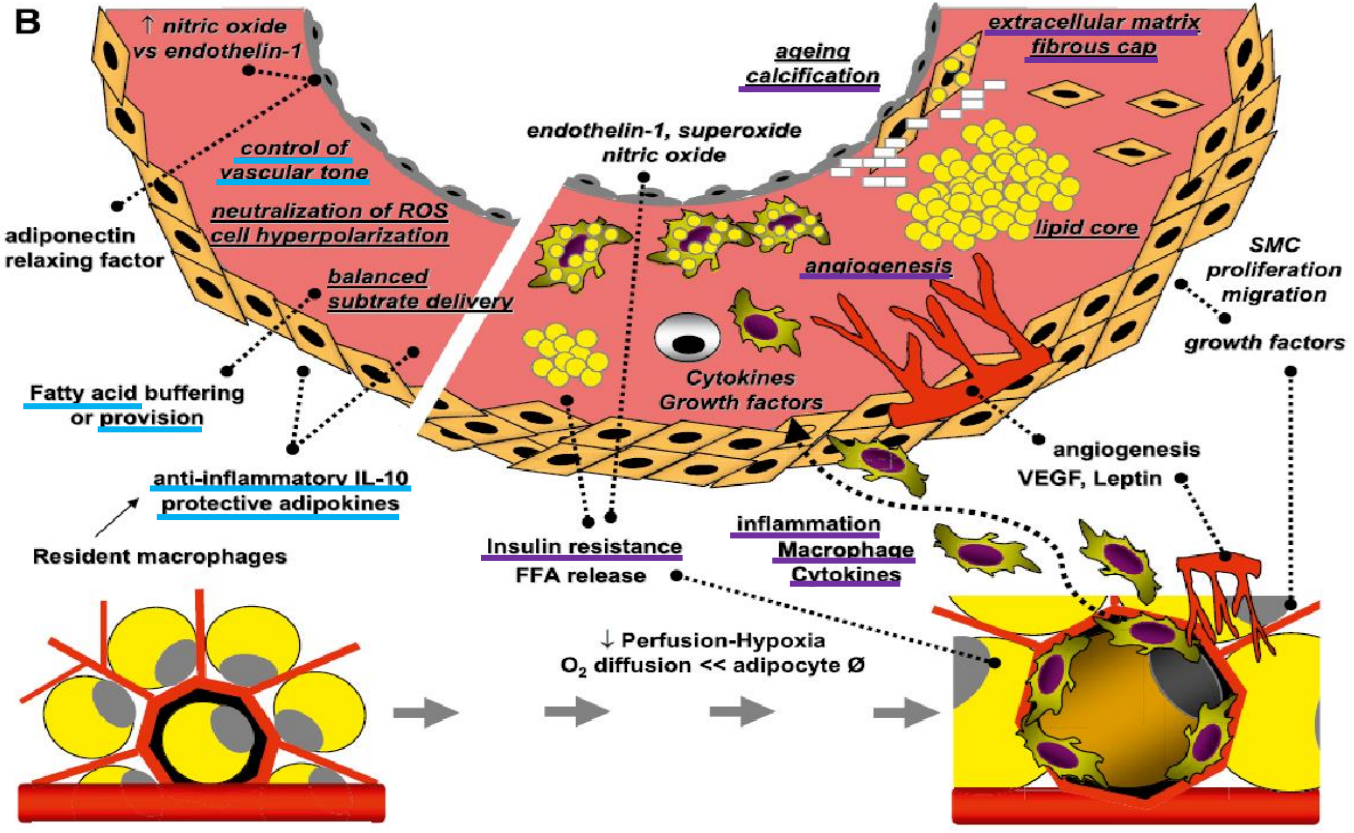
Berenson et al. Am J Med Sci. 2001 Nov;322(5):267-74.

Obesidad: Mecanismo fisiopatológico



de Ferranti et al. Circulation. 2019 Mar 26;139(13):e603-e634.

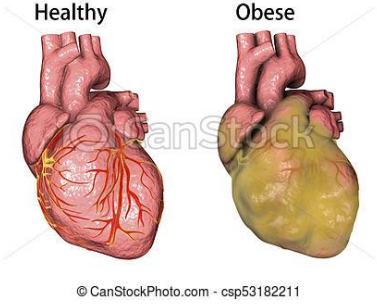
Tejido adiposo en la pared arterial y miocardio



Iozzo et al. *Diabetes Care. 2011;34(Suppl 2):S371-9*

Obesidad: Cambios en el sistema cardiovascular

↑ Grasa pericárdica

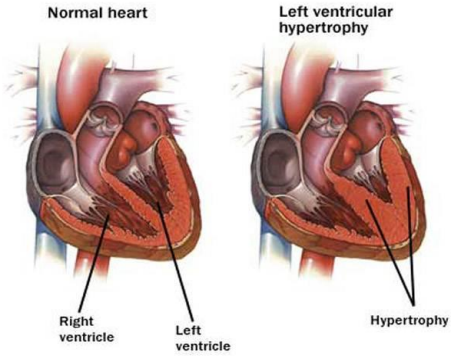


Citoquinas, Adipoquinas, MMP

Inflamación/fibrosis miocárdica

CORONARIOPATÍA

Remodelamiento ventricular izquierdo

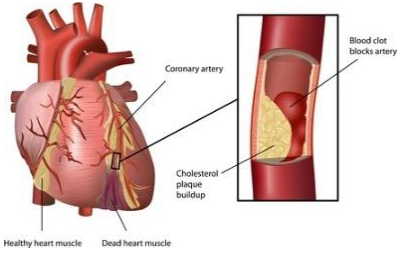


Disfunción sistólica

Disfunción diastólica

INSUFICIENCIA CARDIACA CONGESTIVA

Formación placas colesterol



Disminución flujo coronario

MIOCARDIOPATÍA ISQUÉMICA

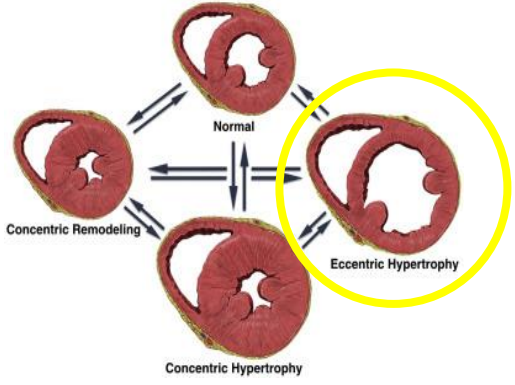
¿Qué debemos medir en el paciente obeso?
Hipertrofia ventricular izquierda

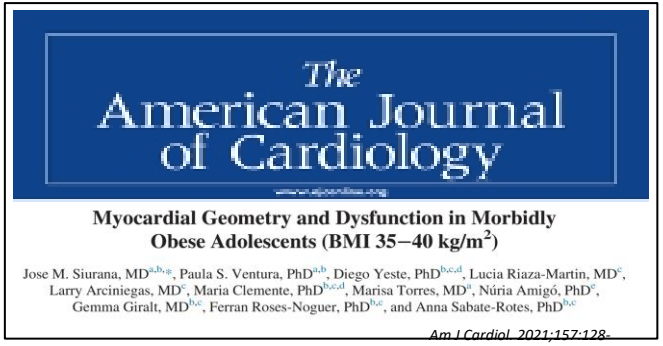
Parámetro para cuantificar la hipertrofia en pediatría:

Fórmula Masa VI (ASE): Masa de VI = 0.8 x {1.04 x (DdVI + septo + PPVI)^3 - DdVI^3} + 0.6 g

Hipertrofia si **Índice Masa Ventricular Izquierda** (masa/talla^{2,7}):

- Hombres >45 g/m^{2,7}
- Mujeres >40 g/m^{2,7}




The American Journal of Cardiology

Myocardial Geometry and Dysfunction in Morbidly Obese Adolescents (BMI 35–40 kg/m^2)

Jose M. Siurana, MD[a,b,*], Paula S. Ventura, PhD[a,b], Diego Yeste, PhD[b,c,d], Lucia Riaza-Martin, MD[e], Larry Arciniegas, MD[e], Maria Clemente, PhD[b,c,d], Marisa Torres, MD[a], Núria Amigó, PhD[e], Gemma Giralt, MD[b,c], Ferran Roses-Noguer, PhD[b,c], and Anna Sabate-Rotes, PhD[b,c]

Am J Cardiol. 2021;157:128-134

Aumento del Índice de Masa VI:

31 g/m^{2,7} en controles vs 46 g/m^{2,7} en obesos

Khoury et al. J Am Soc Echocardiogr. 2009;22(6):709-14

Disfunción diastólica

American Journal of Epidemiology

Original Contribution

Prevalence, Prospective Risk Markers, and Prognosis Associated With the Presence of Left Ventricular Diastolic Dysfunction in Young Adults

The Coronary Artery Risk Development in Young Adults Study

Estudio CARDIA. Seguimiento de 3000 pacientes entre 23-35 años durante 20 años. Asociación entre disfunción diastólica y eventos CVD (3,5 veces mayor riesgo).

Definición de disfunción diastólica:

- **Ratio E/A mitral <1,3 + (hipertrofia o IVRT >90 ms o aumento vol. auricular)**

Desai et al. Am J Epidemiol. 2013 Jan 1;177(1):20-32.

REVIEW ARTICLE

Clinical OBESITY

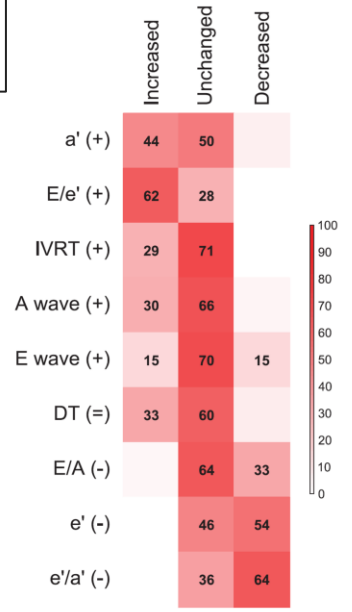
The effect of overweight/obesity on diastolic function in children and adolescents: A meta-analysis

Samuel Burden[1,2] | Benjamin Weedon[1,2] | Luke Whaymand[1] | Josefien Rademaker[2] | Helen Dawes[1,2,3] | Alexander Jones[2]

IMC elevado se asocia a disfunción diastólica.

TDI septal → Mejor parámetro de disfunción.

Insulinorresistencia (HOMA) también se asocia a disfunción diastólica.

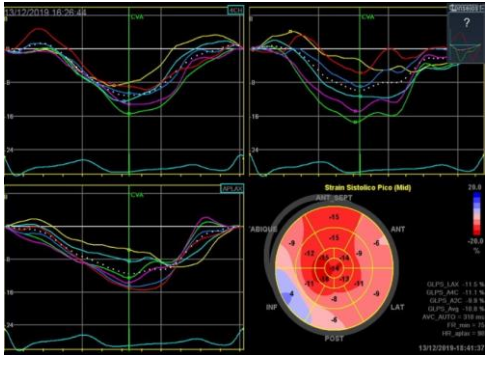


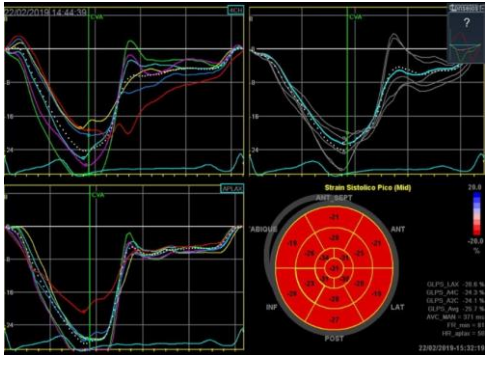
Burden et al. Clin Obes. 2021 Oct;11(5):e12476.

Disfunción sistólica

La fracción de eyección es poco útil para determinar disfunción sistólica. Raramente se encuentra afectada en estadios preclínicos. Alternativa: **Global Longitudinal Strain** (limitaciones en circunferencial y radial)

	Age	BMI	GLS
Barbosa et al. (Eur Heart J Cardiovasc Imaging. 2013;14(9):882-9)	11	29	**-18.4**
Kibar et al. (Balkan Med J. 2015;32(1):56-63)	13	30	**-15.8**
Mangner et al. (JACC Cardiovasc Imaging. 2014;7(12):1198-205)	13	30	**-18.2**
Obert et al. (Obesity (Silver Spring). 2012;20(12):2397-405)	14	36	**-14.2**
Siurana et al. (Am J Cardiol. 2021;157:128-134)	14	36	**-16.5**
Haley et al. (Pediatr Diabetes. 2020;21(2):243-250)	23	39	**-16.1**
Sánchez et al. (J Pediatr. 2015;166(3):660-5)	14	41	**-13.3**





Arteriosclerosis aórtica vs carotídea

Grosor de capas íntima-media en carótida o en aorta abdominal:

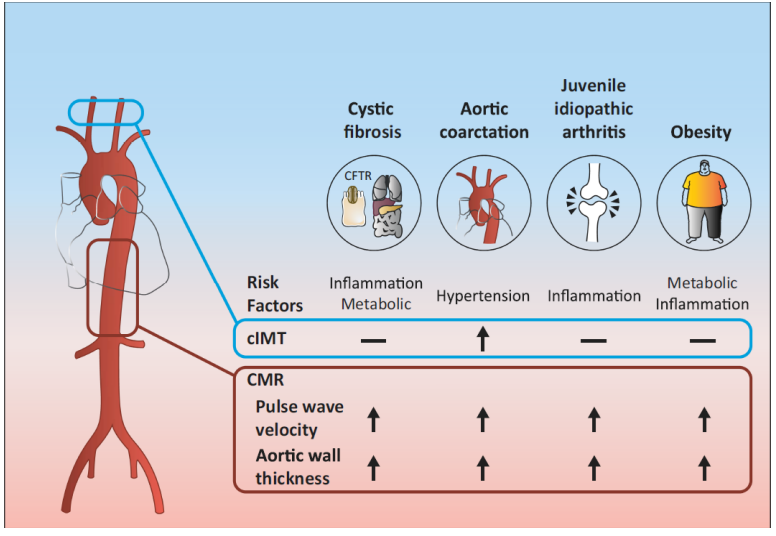
- Carótida: Accesibilidad y reproducibilidad. Limitaciones en grandes obesos.
- Aorta:
  - Ecografía: Limitaciones técnicas en grandes obesos y adolescentes
  - RMN: Precisión pero limitaciones de disponibilidad.

Table 2. cIMT in Normal Children and Adolescents

Mean Age, y	No. of Subjects	Sex	Side	Segment	Wall	Mean cIMT, mm	Reference
11±2	30	M, F	R, L	CC	FW	0.42±0.04	Järvisalo et al[50]
11.1±3.0	27	M, F	R	CC	FW	0.5±0.03	Aggoun et al[39]
11±1	28	M, F	R, L	CC	FW	0.42±0.04	Järvisalo et al[40]
14.2±2.3	20	M	R	CC	FW	0.48±0.06	Tonstad et al[42]
13.9±2.4	10	F	R	CC	FW	0.42±0.05	Tonstad et al[42]
14.7±2.1	20	M, F	R, L	CC	NW, FW	0.39±0.05	Meyer et al[46]
15.7±2.7	35	M, F	R, L	CC	FW	0.32±0.08	Woo et al[47]
13.5±4.0	33	M, F	R	CC	FW	0.38±0.06	Mitsnefes et al[61]
16.3±4.7	20	M, F	R	CC	FW	0.48±0.08	Noto et al[52]
11±2	60	M, F	R, L	CC	FW	0.44±0.05	Ishizu et al[67]

M indicates male; F, female; R, right; L, left; CC, common carotid artery; FW, far wall; and NW, near wall.

Urbina et al. Hypertension. 2009;54:919-950.



Ververs et al. J Am Heart Assoc. 2022;11(14):e024675.

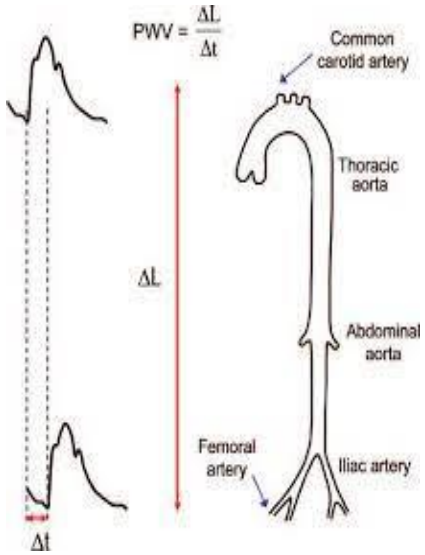
Arteriosclerosis aórtica vs carotídea

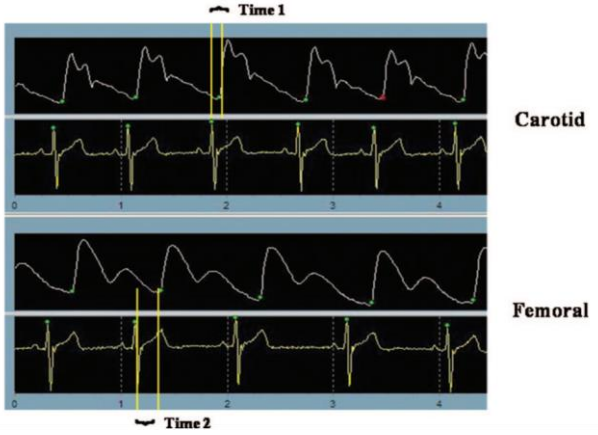
Distensibilidad aórtica: **Pulse Wave Velocity** en aorta:

- Amplia disponibilidad
- Ultrasound / Oscillometric cuff

Valores de normalidad:

- Hombres: 5,5-6,5 m/s
- Mujeres: 5,6-6,4 m/s





Ne et al. Obes Sci Pract. 2017;3(2):171-184.

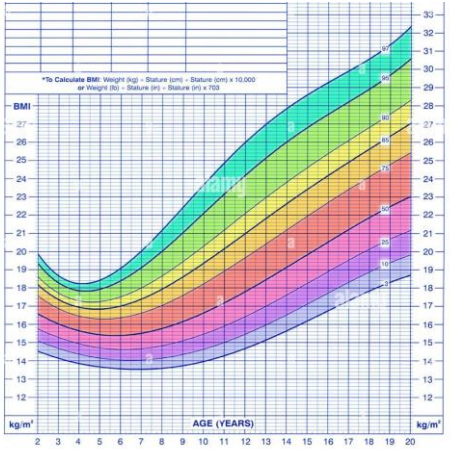
Urbina et al. Hypertension. 2009;54:919-950.

Índice Triponderal

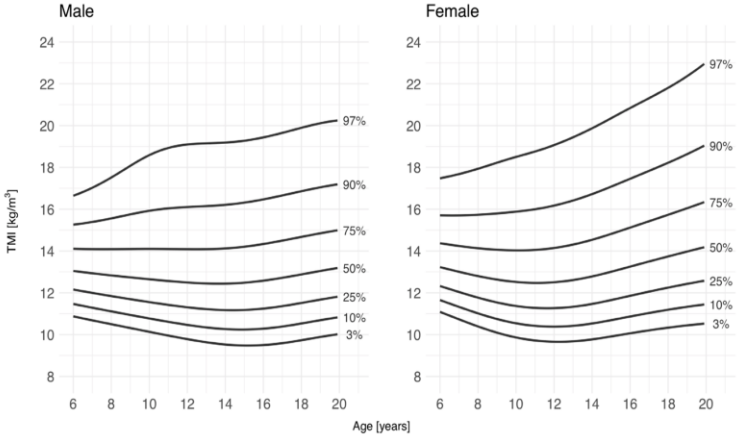
Utilidad entre 8-18 años

Mejor indicador de adiposidad (insulinorresistencia)

BMI (kg/m²)



TMI (kg/m³)



13,9 **15,4** **18,7** ***>22,5***

PESO NORMAL	SOBREPESO	OBESIDAD	RIESGO METABÓLICO

Yeste et al. *An Pediatr (Engl Ed).* 2021;94(2):68-74.
Ashley-Martin et al . *Arch Dis Child*. 2019;104(6):577-582.

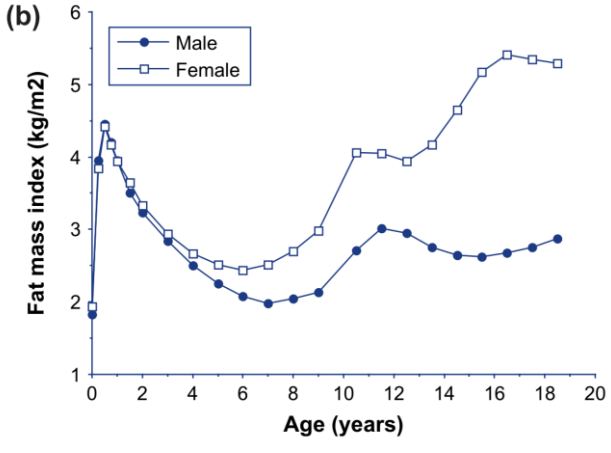
DOCUMENTO DE CONSENSO PARA EL MANEJO DE LA PREVENCIÓN CARDIOVASCULAR PRIMARIA Y SECUNDARIA EN MUJERES.

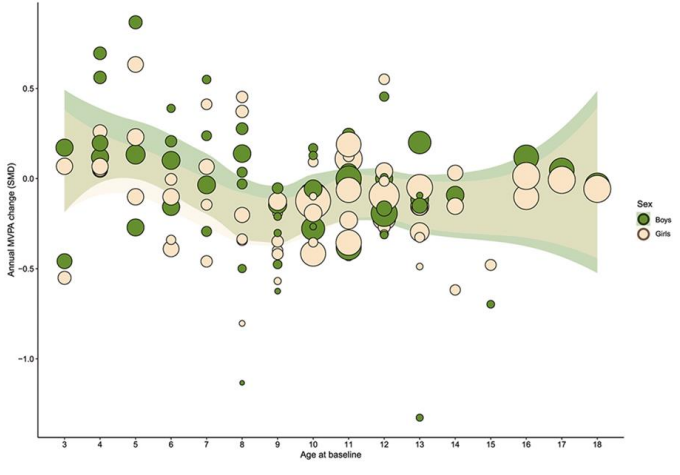
Spanish Society of Cardiology, Association of Preventive Cardiology, Spanish Society of Gynaecology and Obstetrics, Spanish Society of Endocrinology and Nutrition, Spanish Society of Family Medicine and Community, Spanish Society of Primary Care Physicians, Spanish Society of Paediatrics, Spanish Society of Nursing Family and Community, Association of Midwives

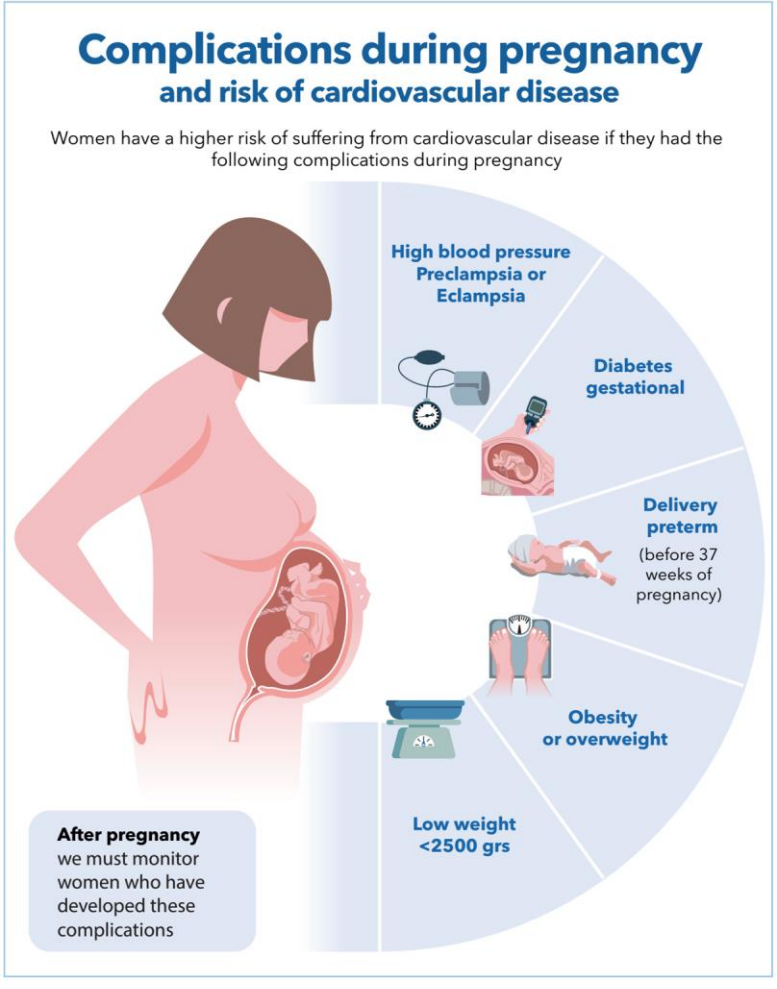
Sambola A, Campuzano R, Castro A, Goya M, Coronado P, Fernández-Olmo R, María-Tablado MA, Ortiz-Cortés C, Ortolà X, Pallarés V, Pijuan A, Plata RM, Sánchez-Hernández RM, Siurana JM, Timoteo C, Viejo-Hernández B.

Mujeres adolescentes:

- Aumento de masa grasa y tejido adiposo respecto a varones (25% vs 14%).
- Disminución del tiempo de ejercicio físico moderado-intenso a partir de los 9 años (boys (−7.8%) and girls (−10.2%), roughly equivalent to a 6 minute per day).
- Aumento del consumo de cigarrillos.







	Recommendations
CV Risk Factors Check-up	Body Mass Index: Measure annually from 2 years old Blood Pressure: Measure annually from 3 years old Fasting lipid profile and glycaemia: - 9-11 years old for the general population - <5 years old if high-risk conditions or family history of dyslipidemia or early CVD in men ≤55 y. and women ≤65 y.
Physical Activity (PA)	60 minutes/day of moderate-vigorous PA 3 times/week of vigorous PA ≤2 hours/day of screen time
Smoking habit	Tobacco product taxation Creating smoke-free environments Electronic cigarettes and novel tobacco products require an updated and proper regulation. Public health campaigns with a focus on preventing smoking among young people should be gender-sensitive.
Consumption of alcohol	Programmes to inform regarding the harmful of alcohol in school and university Early detection Transfer to Programmes of deshabituation in young people

Factores riesgo CV en el paciente cardiópata

- Cardiopatías congénitas con mayor riesgo de eventos CV tempranos:
  - **Defectos septales reparados con shunt residual**
  - **Coartación de aorta** → Riesgo mayor cuando HTA persistente, reparación tardía o dilatación de aorta proximal.
  - **Aorta bicúspide, si estenosis valvular** asociada
  - **Tetralogía de Fallot**
  - **Cardiopatías con anomalías coronarias** (transposición de grandes arterias, origen anómalo de coronarias)
  - **Cirugía de Fontan**

- Cardiopatías adquiridas con mayor riesgo de eventos CV:
  - Enfermedad de **Kawasaki**: Solo en casos **con aneurismas coronarios persistentes** o antecedentes de haberlos presentado.

- Dado el riesgo CV asociado, en pacientes con CC se recomienda niveles lipídicos más reducidos:
  - **LDL <100 mg/dL y triglicéridos <90 mg/dL**

Manejo

Effects of 20-year infancy-onset dietary counselling on cardiometabolic risk factors in the Special Turku Coronary Risk Factor Intervention Project (STRIP): 6-year post-intervention follow-up

Katja Pahkala, Tomi T Laitinen, Harri Niinikoski, Noora Kartiosuo, Suvi P Rovio, Hanna Lagström, Britt-Marie Loo, Pia Salo, Eero Jokinen, Costan G Magnussen, Markus Juonala, Olli Simell, Antti Jula, Tapani Rönnemaa, Jorma Viikari, Olli T Raitakari

Summary

Background Primordial and primary prevention is the cornerstone for cardiometabolic health. In the randomised, controlled Special Turku Coronary Risk Factor Intervention Project (STRIP; n=1116), a 20-year dietary counselling

Lancet Child Adolesc Health 2020; 4: 359-69

	Target achieved		Risk ratio (95% CI)	p value
	Intervention	Control		
Dietary factors				
Polyunsaturated and monounsaturated fat to saturated fat ratio >2:1	78/200 (39%)	70/235 (30%)	1·16 (1·01–1·33)	0·035
Saturated fat <10% of energy intake	35/200 (18%)	36/235 (15%)	1·03 (0·94–1·12)	0·55
Dietary cholesterol <300 mg/day	131/200 (66%)	137/235 (58%)	1·29 (1·02–1·62)	0·032
Fibre				
>3 g/MJ	48/200 (24%)	42/235 (18%)	1·09 (1·00–1·18)	0·050
>25 g/day	46/200 (23%)	44/235 (19%)	1·05 (0·96–1·16)	0·29
Vegetables, fruit, and berries >500 g/day	41/200 (21%)	41/235 (17%)	1·17 (0·80–1·72)	0·42
Salt <6 g/day	65/200 (33%)	73/235 (31%)	1·06 (0·82–1·38)	0·64
Cardiometabolic health factors				
Ideal total cholesterol <5·17 mmol/L	194/240 (81%)	187/261 (72%)	1·45 (1·05–2·01)	0·024
Ideal glucose <5·6 mmol/L	218/240 (91%)	227/261 (87%)	1·46 (0·88–2·43)	0·14
Ideal blood pressure <120/<80 mm Hg	73/240 (30%)	82/262 (31%)	1·02 (0·92–1·12)	0·77
Meeting all three ideal factors	59/240 (25%)	50/261 (19%)	1·09 (1·00–1·18)	0·045
Optimal LDL cholesterol <3·0 mmol/L	166/240 (69%)	158/261 (61%)	1·30 (1·03–1·66)	0·031

Data are n/N (%) unless otherwise specifed. Risk ratios are for intervention vs control group (adjusted for sex).

Table 3: **Effect of the intervention on dietary targets and cardiometabolic health factors at age 26 years follow-up**

STRIP Study en Finlandia → Demostró que el consejo dietético continuado durante la infancia tiene efectos beneficiosos en los factores de riesgo CV (colesterol total, LDL, glucemia y HOMA) tras un periodo de 26 años.

Consejo dietético y sesiones de educación nutricional continuadas desde los 7 meses hasta los 20 años.

Dieta cardio-saludable (baja ingesta de grasas saturadas y colesterol)

Manejo

gencat

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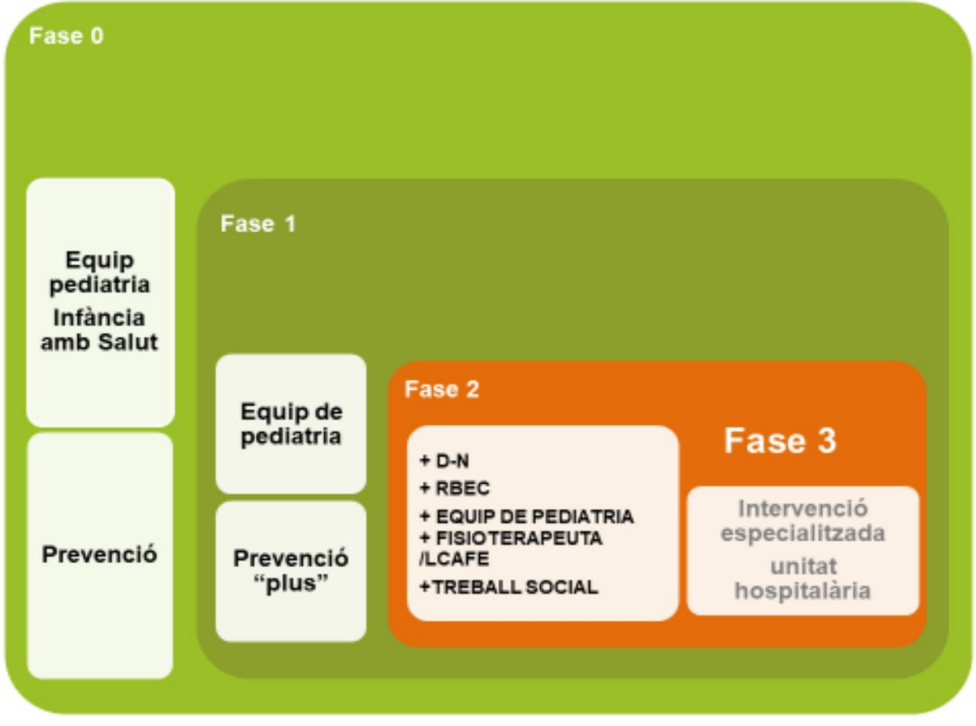
Programa de prevenció i abordatge de l'obesitat infantil a Catalunya (POICAT)



DIFERÈNCIES ENTRE LES VARIABLES D'HÀBITS ABANS I DESPRÉS DEL CONSELL

EVOLUCIÓ DE L'IMC DELS INFANTS

Infants	$IMC_{inicial}$	IMC_{final}	Mesos intervenció	*p*-valor
	X ±SD	*X ±SD*	*X ±SD*	
n total (n=47)	*26,4±4,3*	*25,4±4,7*	*14,9 ± 7,1*	*0,00*

FASE 3: UNITAT ESPECIALITZAD A L'HOSPITAL

- Comorbiditats que requereixen farmacologia
- Obesitat mòrbida
- Sospita d'origen genètic

Manejo

Semaglutide and cardiovascular outcomes in patients with obesity and prevalent heart failure: a prespecified analysis of the SELECT trial

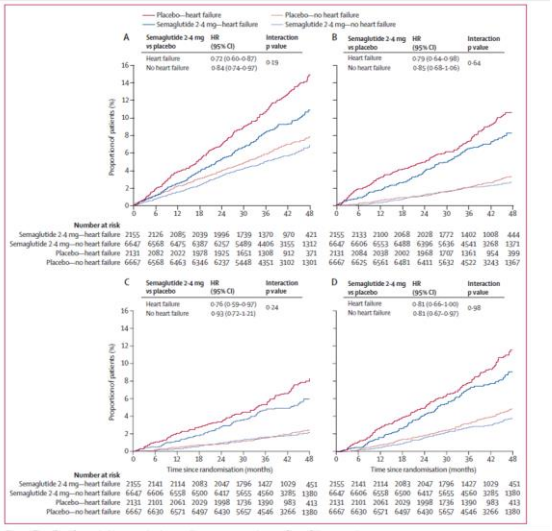
John Deanfield, Subodh Verma, Benjamin M Scirica, Steven E Kahn, Scott S Emerson, Donna Ryan, Ildiko Lingvay, Helen M Colhoun, Jorge Plutzky, Mikhail N Kosiborod, G Kees Hovingh, Søren Hardt-Lindberg, Ofir Frenkel, Peter E Weeke, Søren Rasmussen, Assen Goudev, Chim C Lang, Miguel Urina-Triana, Mikko Pietilä, A Michael Lincoff, for the SELECT Trial Investigators

Summary

Background Semaglutide, a GLP-1 receptor agonist, reduces the risk of major adverse cardiovascular events (MACE)

Lancet 2024; 404: 773-86

- Semaglutida (agonista del receptor GLP-1) → Estimula la secreción pancreática de insulina y reduce los niveles de HbA1c. Además, causa sensación de saciedad y enlentece el vaciamiento gástrico.
- Estudio SELECT (Londres):
  - Adultos ≥45 años con BMI ≥27 kg/m² y enfermedad cardiovascular establecida.
  - Semaglutide vs Placebo
- Semaglutide reduce el riesgo de eventos CV adversos, fallo cardiaco, mortalidad CV y mortalidad de cualquier causa.
- En pacientes sin afectación de la FE o con afectación leve:
  - Es el tipo de fallo cardíaco más común.
  - Semaglutide reduce el número de eventos de fallo cardiaco.



Deanfield et al. Lancet. 2024;404:773–86

Kosiborod et al. Lancet. 2024;404(10456):949-961

Conclusiones y Recomendaciones

- Chequeo general de factores de riesgo CV:
  - IMC desde los 2 años.
  - TA desde los 3 años.
  - Colesterol a los 9-11 años. Si AF de enfermedades CV, chequear a los 3-5 años.
- Pacientes con obesidad que deberían hacerse una valoración CV:
  - Grados de obesidad severa o mórbida
  - Comorbilidades asociadas (insulinorresistencia, HTA, dislipemia, esteatosis hepática, apnea obstructiva del sueño)
  - Patologías que supongan un riesgo CV aumentado.
- A nivel práctico, los parámetros de diagnóstico y seguimiento son:
  - Índice Masa VI
  - Función diastólica (ratio E/A mitral)
  - GIM carotídea
- En edad pediátrica, solo observamos cambios precoces y reversibles.
- Manejo:
  - Medidas generales:
    - Ejercicio físico: 60 minutos/día de ejercicio moderado-intenso y 3 veces/semana de ejercicio intenso.
    - Dieta cardiosaludable
    - Evitar tabaco y alcohol
  - Medicación:
    - HTA
    - Agonistas GLP-1 para obesidad en adolescentes: controvertido

Gracias

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