



## Aspectos prácticos en el manejo de la dislipidemia asociado a la resistencia a la insulina

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Universidad de Costa Rica

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### Conflictos de interés

- He recibido honorarios por conferencias, advisory board y/o investigación clínica de:
  - Astra Zeneca
  - Abbott Nutrición
  - Novartis Pharma Logistics Inc
  - Novartis Oncology
  - Novo Nordisk
  - Merck Sharp & Dohme
  - Roche
  - Glaxo SmithKline
  - Sanofi Aventis
  - Boehringer
  - Organon

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### Objetivos

- Implicaciones y manejo de hipertrigliceridemia/dislipidemia mixta
- Modificación de estilos de vida basado en la evidencia

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## HIPERTRIGLICERIDEMIA/ DISLIPIDEMIA MIXTA

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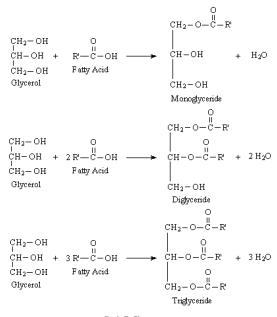


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### Ensamblaje en triglicéridos



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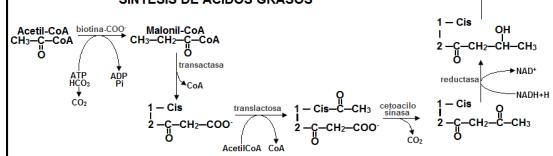


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### SÍNTESIS DE ÁCIDOS GRASOS



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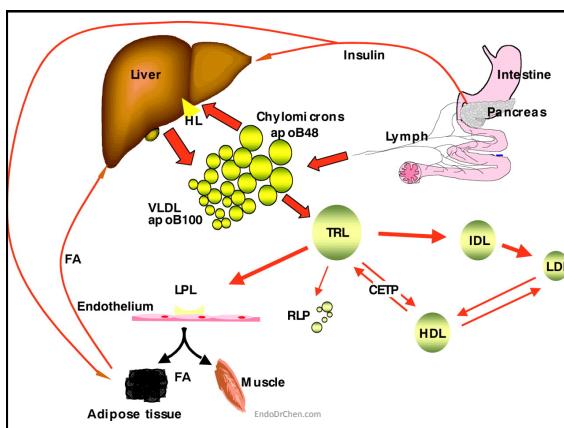
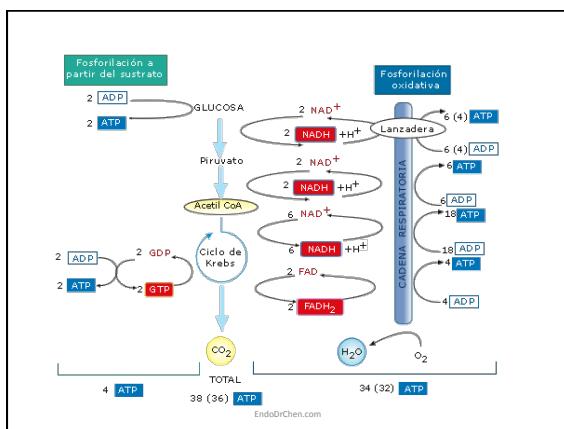
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### Triglicéridos y pancreatitis

- Hipertrigliceridemia (mayor a 1000 mg/dl) se ha observado entre 12 y 38% de pacientes con pancreatitis
- Pocos estudios controlados
- Al parecer niveles muy altos aumentan el RR 4.0
- Pancreatitis de otras causas pueden cursar con hipertrigliceridemia moderada

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## Mecanismos

- Mediado por quilomicrones
- Alteración del flujo capilar que lleva a isquemia en lecho pancreático
- Liberación de lipasa aumenta ácidos grasos libres que son proinflamatorios

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Gan SI. World J Gastroenterol. 2006;12(44):7197

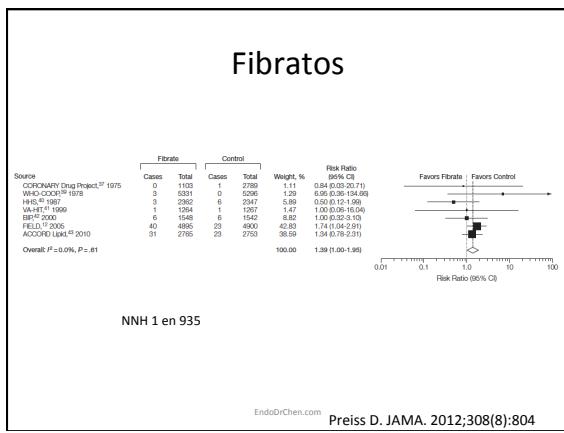
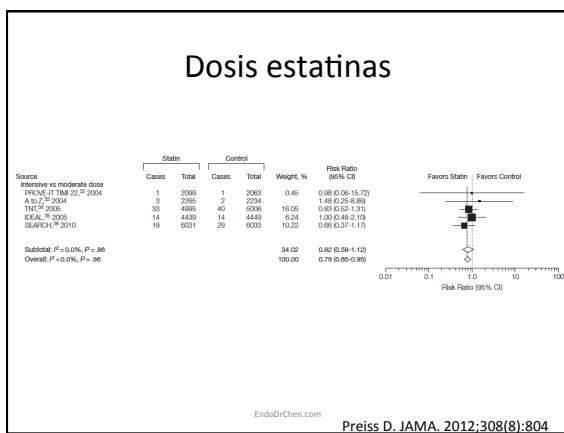
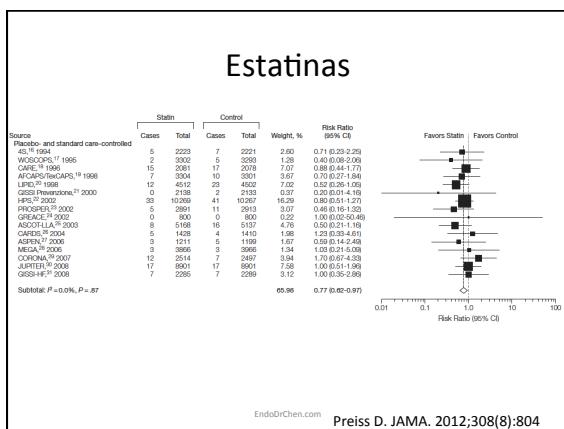
## Nueva clasificación

|                               | NCEP ATP III (3) |                    | The Endocrine Society 2010*      |                      |
|-------------------------------|------------------|--------------------|----------------------------------|----------------------|
| Normal                        | <150 mg/dl       | <1.7 mmol/liter    | Normal                           | <150 mg/dl           |
| Borderline-high triglycerides | 150–199 mg/dl    | 1.7–2.3 mmol/liter | Mild hypertriglyceridemia        | <1.7 mmol/liter      |
| High triglycerides            | 200–499 mg/dl    | 2.3–5.6 mmol/liter | Moderate hypertriglyceridemia    | 150–199 mg/dl        |
| Very high triglycerides       | ≥500 mg/dl       | ≥5.6 mmol/liter    | Severe hypertriglyceridemia      | 200–999 mg/dl        |
|                               |                  |                    |                                  | 1000–1999 mg/dl      |
|                               |                  |                    |                                  | 11.2–22.4 mmol/liter |
|                               |                  |                    | Very severe hypertriglyceridemia | ≥2000 mg/dl          |
|                               |                  |                    |                                  | ≥22.4 mmol/liter     |

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Berglund L. J Clin Endocrinol Metab. 2012;97:2969

## INTERVENCIÓN FARMACOLÓGICA

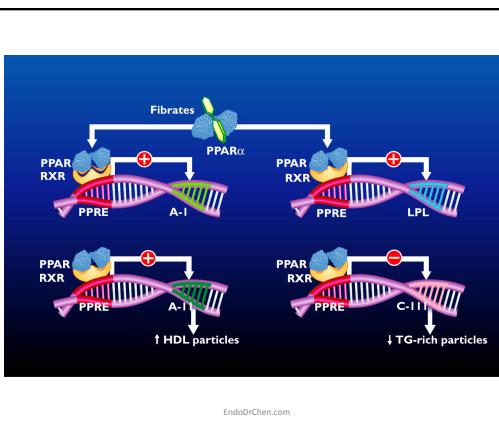
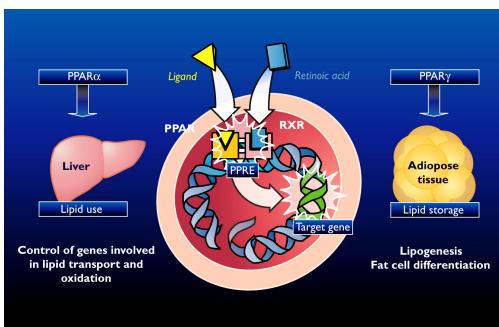
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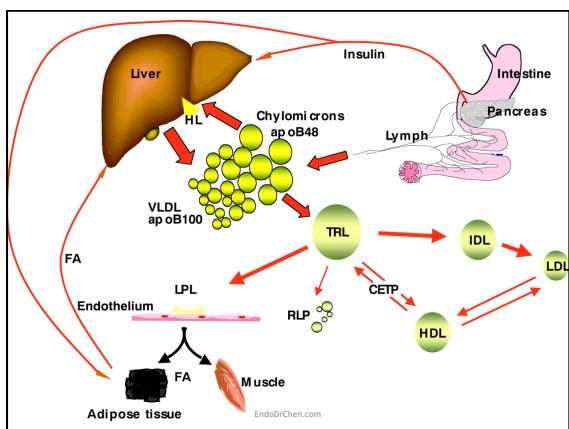


## Fibratos y pancreatitis

- Clofibrato aumentaba el riesgo de colelitiasis
- Los fibratos nuevos tienen menor riesgo
- Aumentan la concentración de colesterol en la bilis
- No hay ensayos clínicos para triglicéridos mayores a 500 mg/dl

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Preiss D. JAMA. 2012;308(8):804






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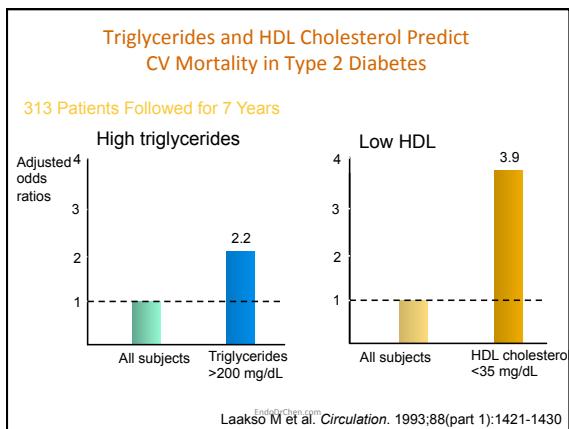
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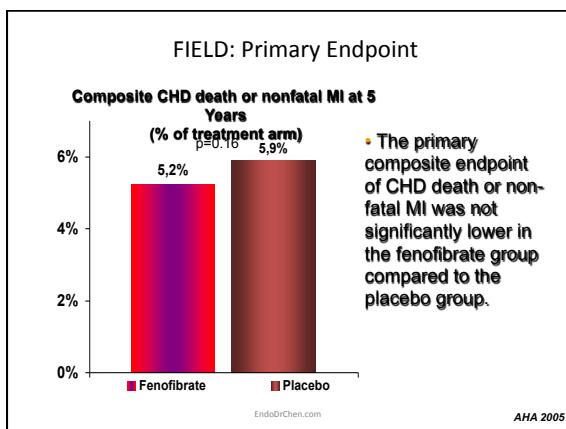
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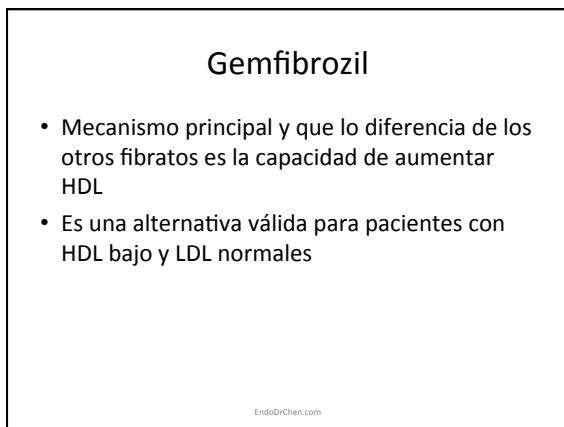
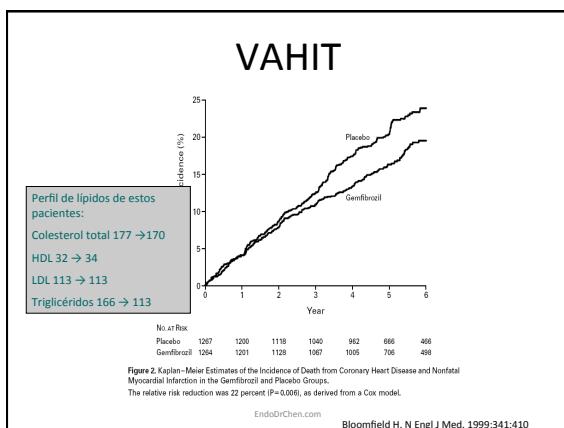
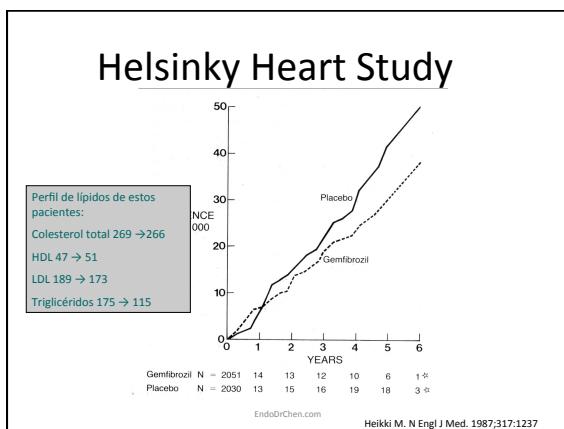
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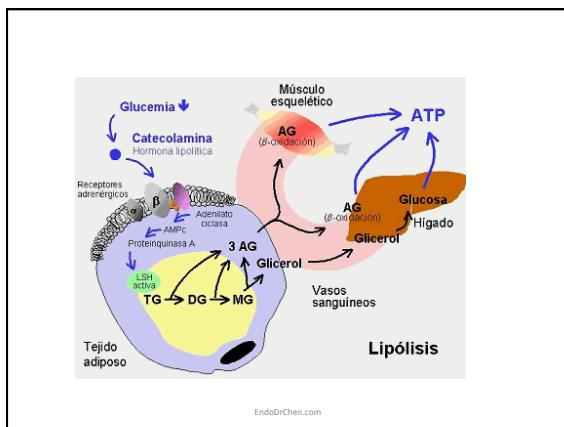
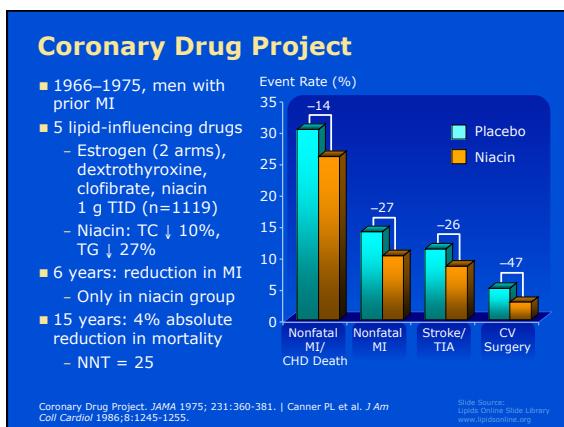


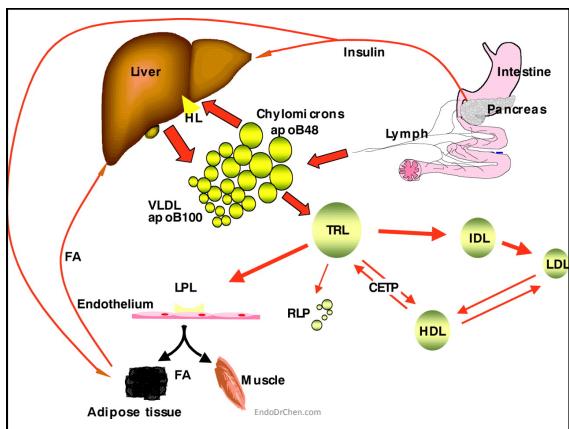
| Outcome  | Feinblatt<br>(N=2765) |         | Placebo<br>(N=2753) |         | Hazard Ratio<br>(95% CI) | P Value |
|--|-----------------------|---------|---------------------|---------|--------------------------|---------|
|  | no. of events         | rate/yr | no. of events       | rate/yr |                          |         |
| Primary outcome (major fatal or nonfatal cardiovascular event)                         | 291                   | 2.24    | 310                 | 2.41    | 0.92 (0.79-1.08)         | 0.32*   |
| Secondary outcomes   |                       |         |                     |         |                          |         |
| Primary outcome plus revascularization or hospitalization for congestive heart failure | 641                   | 5.35    | 667                 | 5.64    | 0.94 (0.85-1.05)         | 0.30    |
| Major coronary disease event†  | 332                   | 2.58    | 353                 | 2.79    | 0.92 (0.79-1.07)         | 0.26    |
| Nonfatal myocardial infarction   | 173                   | 1.32    | 186                 | 1.44    | 0.91 (0.74-1.12)         | 0.39    |
| Stroke   |                       |         |                     |         |                          |         |
| Any  | 51                    | 0.38    | 48                  | 0.36    | 1.05 (0.71-1.56)         | 0.80    |
| Nonfatal   | 47                    | 0.35    | 40                  | 0.30    | 1.17 (0.76-1.78)         | 0.48    |
| Death  |                       |         |                     |         |                          |         |
| From any cause   | 203                   | 1.47    | 221                 | 1.61    | 0.91 (0.75-1.10)         | 0.33*   |
| From cardiovascular cause  | 99                    | 0.72    | 114                 | 0.83    | 0.86 (0.66-1.12)         | 0.26    |
| Fatal or nonfatal congestive heart failure   | 120                   | 0.90    | 143                 | 1.09    | 0.82 (0.65-1.05)         | 0.10    |

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The Accord Study Group N Engl J Med. 2010

## Y QUÉ TAL GEMFIBROZIL?







| Variable                  | Hazard Ratio (95% CI) |                     |                     |                     |                      | P Value for Trend | P Value for Interaction |
|---------------------------|-----------------------|---------------------|---------------------|---------------------|----------------------|-------------------|-------------------------|
|                           | Quintile 1            | Quintile 2          | Quintile 3          | Quintile 4          | Quintile 5           |                   |                         |
| <b>Body-mass index†</b>   |                       |                     |                     |                     |                      |                   |                         |
| <25                       | 1                     | 1.48<br>(0.52–4.23) | 1.64<br>(0.54–5.29) | 1.71<br>(0.73–6.42) | 1.73<br>(0.79–6.60)  | <0.001            | 0.03                    |
| ≥25                       | 1                     | 1.36<br>(0.86–2.15) | 1.66<br>(1.02–2.68) | 2.44<br>(1.43–4.16) | 3.78<br>(1.95–7.35)  | <0.001            |                         |
| <b>Triglyceride level</b> |                       |                     |                     |                     |                      |                   |                         |
| <150 mg/dl                | 1                     | 1.21<br>(0.63–2.29) | 1.50<br>(0.76–2.97) | 2.43<br>(1.14–5.23) | 2.73<br>(1.28–6.67)  | <0.001            | 0.87                    |
| ≥150 mg/dl                | 1                     | 1.41<br>(0.80–2.49) | 1.90<br>(1.03–3.51) | 2.37<br>(1.25–4.50) | 3.24<br>(1.48–7.10)  | <0.001            |                         |
| <b>Family history</b>     |                       |                     |                     |                     |                      |                   |                         |
| Negative                  | 1                     | 1.24<br>(0.66–2.35) | 1.50<br>(0.78–2.87) | 3.77<br>(1.62–8.77) | 6.49<br>(2.25–18.86) | <0.001            | 0.37                    |
| Positive                  | 1                     | 1.96<br>(0.77–5.02) | 2.51<br>(0.88–7.19) | 2.57<br>(0.94–6.99) | 4.58<br>(1.58–13.33) | <0.001            |                         |

EndoDrChen.com      Tirosh A. N Engl J Med. 2005;353:1454

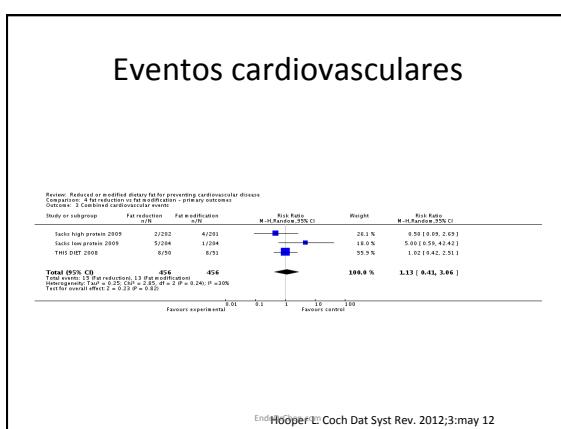
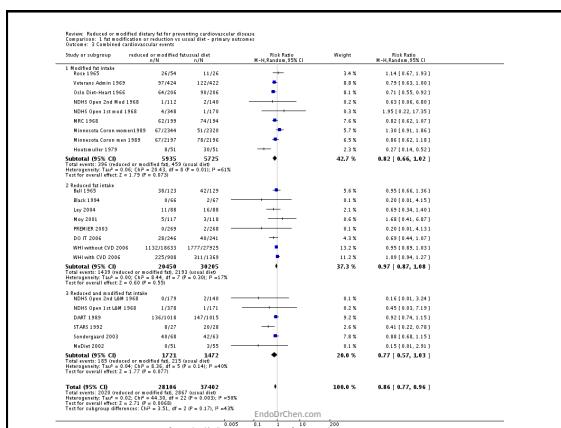
## MODIFICACIÓN DE ESTILOS DE VIDA BASADO EN EVIDENCIA

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## Recomendaciones

- Las intervenciones que funcionan según las guías:
- Fibra
- Esteroles vegetales
- Grasas saturadas
- Reducir colesterol de la dieta

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## PREDIMED

- Hombres 55-80 años
- Mujeres 60-80 años
- DM ó 3 factores de riesgo:
  - Tabaquismo
  - HTA
  - LDL alto
  - HDL bajo
  - Sobre peso u obesidad
  - Historia de enfermedad coronaria prematura

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Estruch R. N Engl J Med. 2013.

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### Mediterranean diet

#### Recommended

|  |                     |
|--|---------------------|
| Olive oil*   | ≥4 tbsp/day         |
| Tree nuts and peanuts†                                   | ≥3 servings/wk      |
| Fresh fruits   | ≥3 servings/day     |
| Vegetables   | ≥2 servings/day     |
| Fish (especially fatty fish), seafood                    | ≥3 servings/wk      |
| Legumes  | ≥3 servings/wk      |
| Sofrito‡   | ≥2 servings/wk      |
| White meat   | Instead of red meat |
| Wine with meals (optionally, only for habitual drinkers) | ≥7 glasses/wk       |
| <hr/>  |                     |

#### Discouraged

|  |                |
|--|----------------|
| Soda drinks                                    | <1 drink/day   |
| Commercial bakery goods, sweets, and pastries§ | ≤3 servings/wk |
| Spread fats                                    | <1 serving/day |
| Red and processed meats                        | <1 serving/day |

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Estruch R. N Engl J Med. 2013.

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### Low-fat diet (control)

#### Recommended

|                              |                 |
|------------------------------|-----------------|
| Low-fat dairy products       | ≥3 servings/day |
| Bread, potatoes, pasta, rice | ≥3 servings/day |
| Fresh fruits                 | ≥3 servings/day |
| Vegetables                   | ≥2 servings/wk  |
| Lean fish and seafood        | ≥3 servings/wk  |
| <hr/>                        |                 |

#### Discouraged

|  |                |
|--|----------------|
| Vegetable oils (including olive oil)           | ≤2 tbsp/day    |
| Commercial bakery goods, sweets, and pastries§ | ≤1 serving/wk  |
| Nuts and fried snacks                          | ≤1 serving /wk |
| Red and processed fatty meats                  | ≤1 serving/wk  |
| Visible fat in meats and soups¶                | Always remove  |
| Fatty fish, seafood canned in oil              | ≤1 serving/wk  |
| Spread fats                                    | ≤1 serving/wk  |
| Sofrito‡                                       | ≤2 servings/wk |

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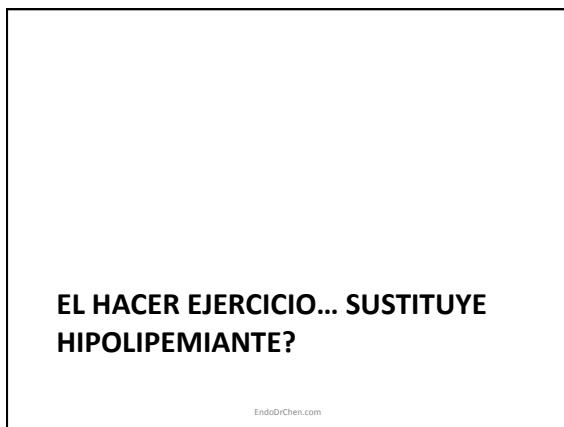
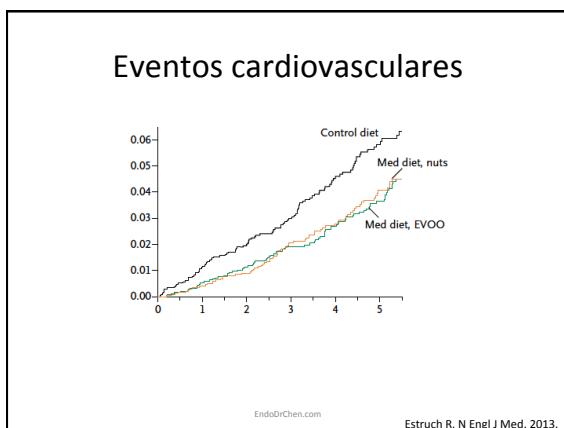
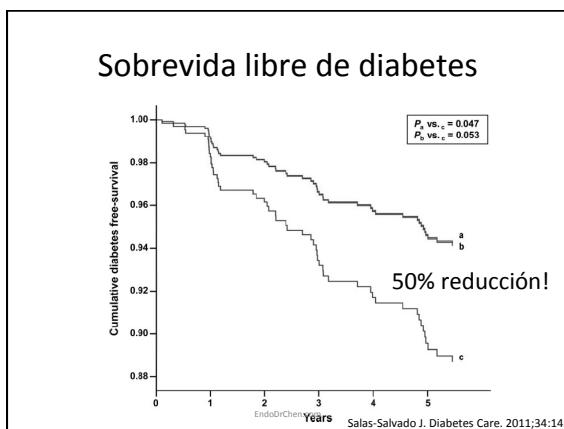
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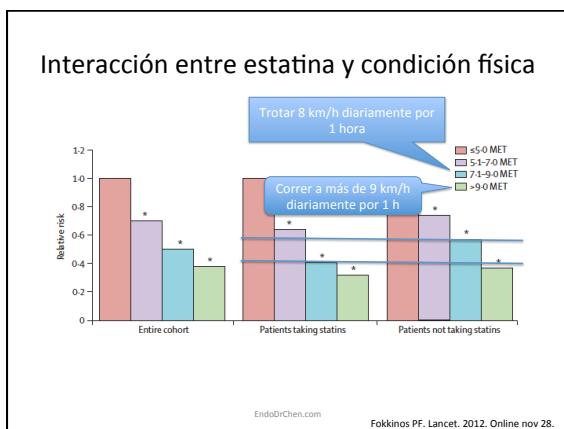


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## Conclusiones

- Hipertrigliceridemia tiene implicación para pancreatitis y riesgo de DM, pero la intervención farmacológica no ha reducido riesgo de eventos CV
- Adherencia es fundamental para que haya beneficio a largo plazo
- Perfil de seguridad es diferente según cada estatina
- Modificación de estilos de vida y dieta mediterránea

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# Actualización Médica Periódica

Número 147      www.ampmd.com      Agosto 2013

ARTÍCULO DE REVISIÓN  
Dr. Chih Hao Chen Ku<sup>1</sup>

**ABORDAJE PRÁCTICO DE DISLIPIDEMIA ASOCIADA CON RESISTENCIA A LA INSULINA**

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A scenic view of the Arenal Volcano in Costa Rica, with lush green trees and purple flowers in the foreground. The volcano itself is a prominent, dark, conical shape rising against a clear blue sky.



Preguntas...  
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