

★ ★ ★  
★ Studiul de eficienta si tolerabilitate  
a suplimentului nutritiv  
“ulei de canepa presat la rece”  
la pacientii cu diabet zaharat tip 2  
(rezultate preliminare)

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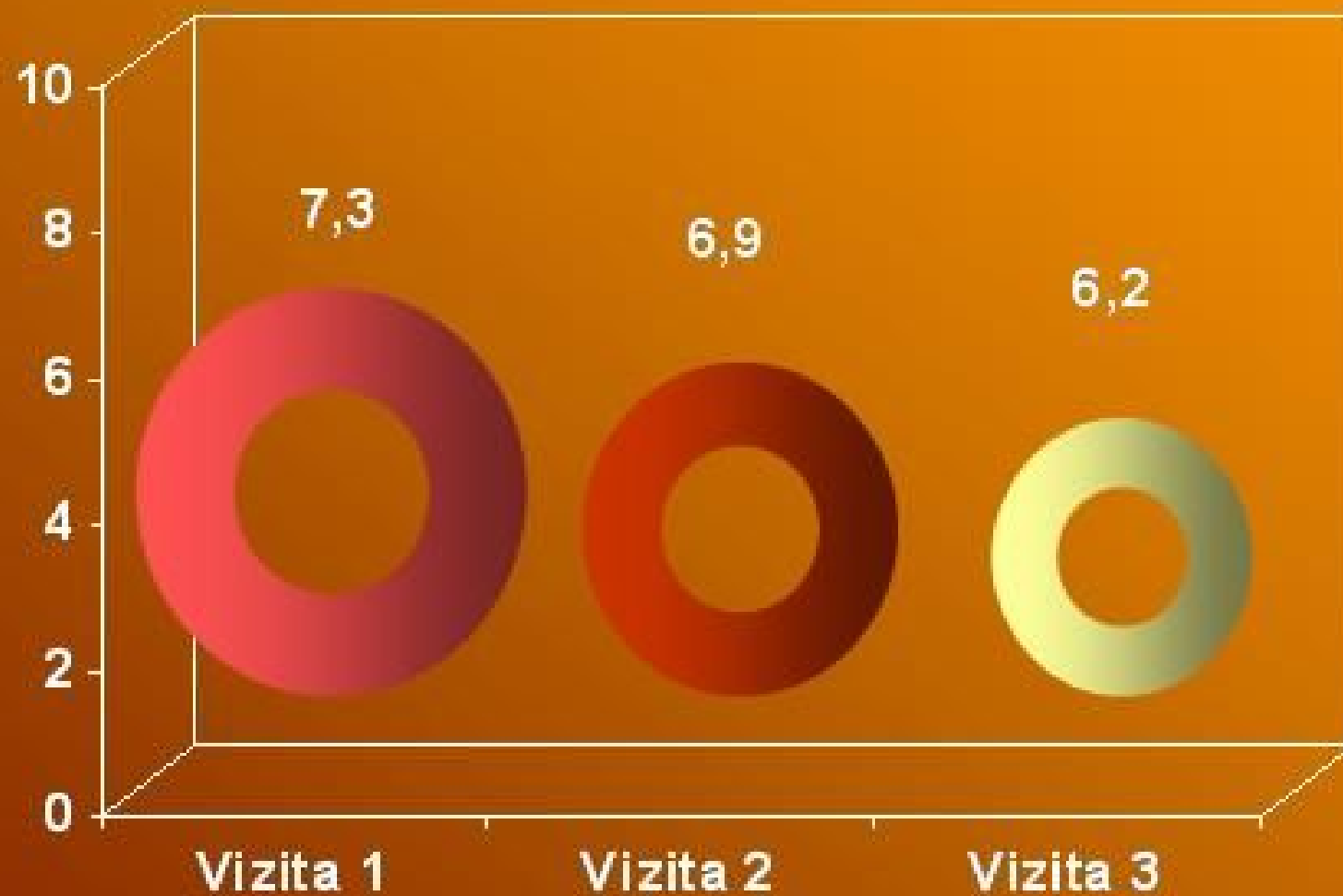
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# Rezultate

◆ HbA1c (%)



# Concluzii

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- ◆ Lucrarea de fata evidentiaza efectul benefic al acestui supliment nutritiv asupra lipidelor serice si asupra echilibrului glicemic la persoanele cu diabet zaharat;
- ◆ Am observat de asemenea, pastrarea efectului pozitiv si dupa o perioada de timp de la intreruperea administrarii acestui produs, care pe langa avantajul de a-si fi pastrat intacte proprietatile chimice gratie procedeeului de prelucrare la rece, prezinta in acelasi timp un continut remarcabil in acizi grasi polinesaturati si un raport optim intre principalii reprezentanti ai acestei clase (acidul linoleic si acidul alfa-linolenic).



# Introducere

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- ◆ Hipertrigliceridemia moderata alaturi de scaderea concentratiei de HDL colesterol este considerata cea mai frecventa forma de dislipidemie la pacientii cu diabet zaharat (dislipidemia diabetica) reprezentand totodata un factor independent de risc cardiovascular;
- ◆ Pentru pacientii care nu ating obiectivul trigliceridemic sub tratament cu fibrati in asociere sau nu cu statina ghidurile recomanda luarea in considerare a asocierii acizilor grasi polinesaturati.



# Acizi grasi relevanti din punct de vedere fiziologic

Simbolul numeric	Numele comun	Structura	Comentarii
14:0	Acidul miristic	$\text{CH}_3(\text{CH}_2)_{12}\text{COOH}$	Se ataseaza frecvent de capatul N-terminal al proteinelor citoplasmatice membranare
16:0	Acidul palmitic	$\text{CH}_3(\text{CH}_2)_{14}\text{COOH}$	Produs final de sinteza a acizilor grasi la mamifere
16:1 $\Delta^9$	Acidul palmitoleic	$\text{CH}_3(\text{CH}_2)_5\text{C}=\text{C}(\text{CH}_2)_9\text{COOH}$	
18:0	Acidul stearic	$\text{CH}_3(\text{CH}_2)_{16}\text{COOH}$	
18:1 $\Delta^9$	Acidul oleic	$\text{CH}_3(\text{CH}_2)_7\text{C}=\text{C}(\text{CH}_2)_9\text{COOH}$	
18:2 $\Delta^{9,12}$	Acidul linoleic	$\text{CH}_3(\text{CH}_2)_4\text{C}=\text{CCH}_2\text{C}=\text{C}(\text{CH}_2)_7\text{COOH}$	Acid gras esential
18:3 $\Delta^{9,12,15}$	Acidul linolenic	$\text{CH}_3\text{CH}_2\text{C}(\text{OH})=\text{CCH}_2\text{C}=\text{CCH}_2\text{C}=\text{C}(\text{CH}_2)_7\text{COOH}$	Acid gras esential
20:4 $\Delta^{5,8,11,14}$	Acidul arahidonic	$\text{CH}_3(\text{CH}_2)_3(\text{CH}_2\text{C}=\text{C})_4(\text{CH}_2)_3\text{COOH}$	Precursor al eicosanoidilor

# Familiile de acizi grasi esentiali

## Familia $\omega$ -6



**C18:2  $\omega$ -6**

**Linoleic**

Ulei de canepa  
Ulei de porumb  
Ulei de sofran  
Ulei de floarea soarelui



**C20:4  $\omega$ -6**

**Arachidonic**

Carne, oua,  
creie

*Protrombotic*  
*Proinflamator*

## Familia $\omega$ -3



**C18:3  $\omega$ -3**

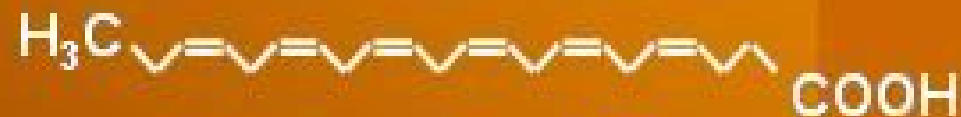
**$\alpha$ -Linolenic**

Ulei de canepa  
Ulei de in  
Ulei de rapita  
Ulei de soia



**C20:5  $\omega$ -3**

**Eicosapentaenoic  
EPA**



**C22:6  $\omega$ -3**

**Docosahexaenoic  
DHA**

Ulei de peste

*Anti-trombotic*  
*Anti-inflamator*



# Structura acidului linoleic

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**cis, cis 9,12 acid octadecadienoic**



# Calea Omega-6

**Inhibitori:** Imbatranirea  
Diabetul  
Colesterolul  
Alcoolul  
Eczema  
Deficite diverse

Acid linoleic (18:2)

Acid  $\gamma$ -linolenic (18:3)

Acid dihomo- $\gamma$ -linolenic (20:3)

Acid arahidonic (20:4)

Carne si oua

Eliberati din depozite

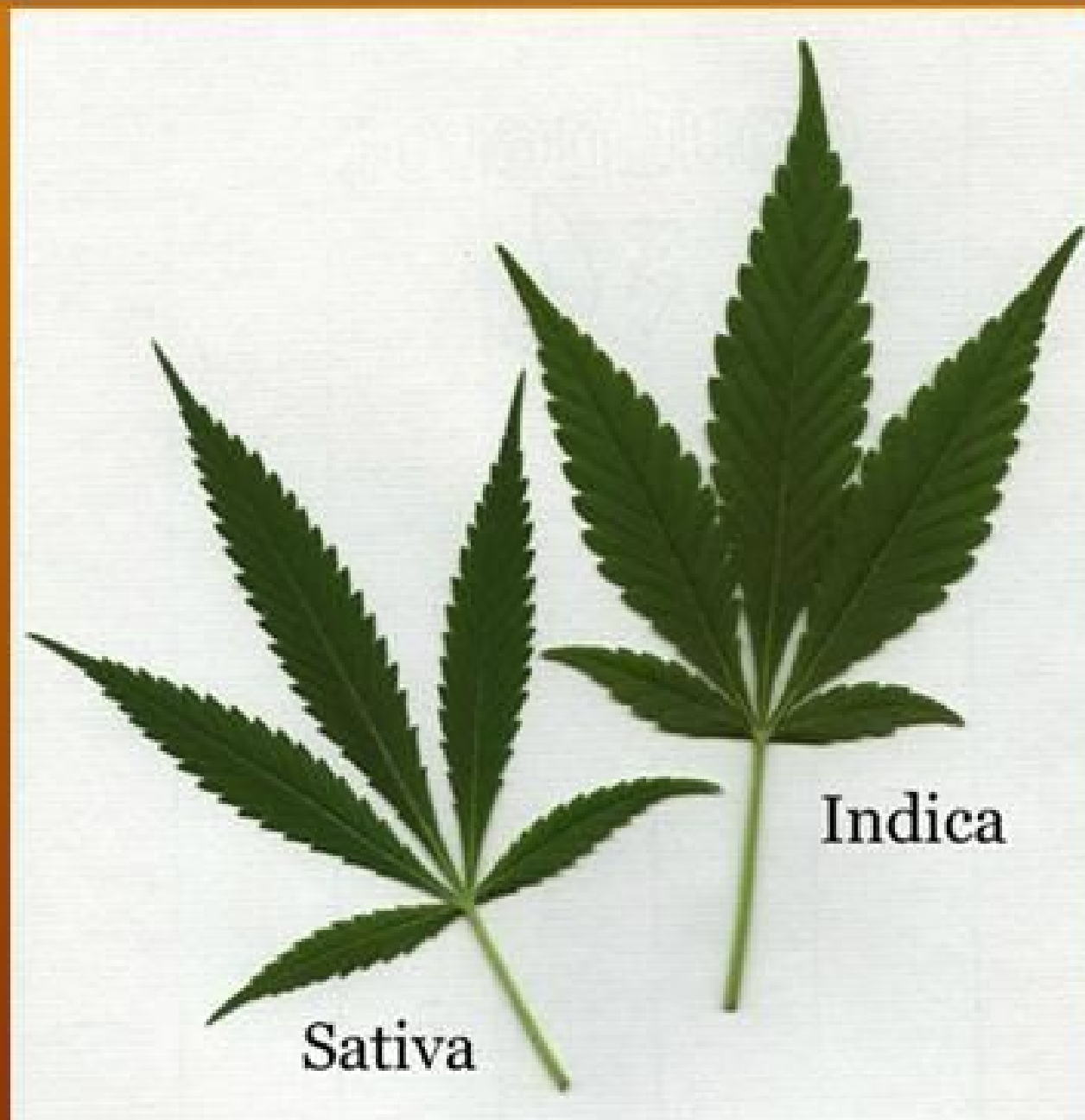




# Continutul in acizi grasi (%)

	Linoleic	GLA	ALA	Stearidonic	Erusic
Evening primrose (Luminita noptii)	68 - 75	8 - 15	0	0	0
Borage (Limba mielului)	35 - 40	18 - 25	0 - 1	<1	2 - 3
Blackcurrant (coacazul negru)	45 - 55	12 - 18	12 - 15	2 - 4	0
Hemp (canepa)	50 - 60	1 - 3	15 - 25	0 - 2	0
<i>Mucor</i>	10	19	0	0	0
<i>Echium</i>	16	12	28	14	<1





Sativa

Indica

Cannabis sativa & indica leaves  
Photo by Lord Gnome, © 2002 Erowid.org



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“... Si Dumnezeu i-a spus lui Moise sa faca ulei sfant din mirt, scotisoara dulce, *kaneh bosn* [cannabis], si kassia”

EXODUL 30:23

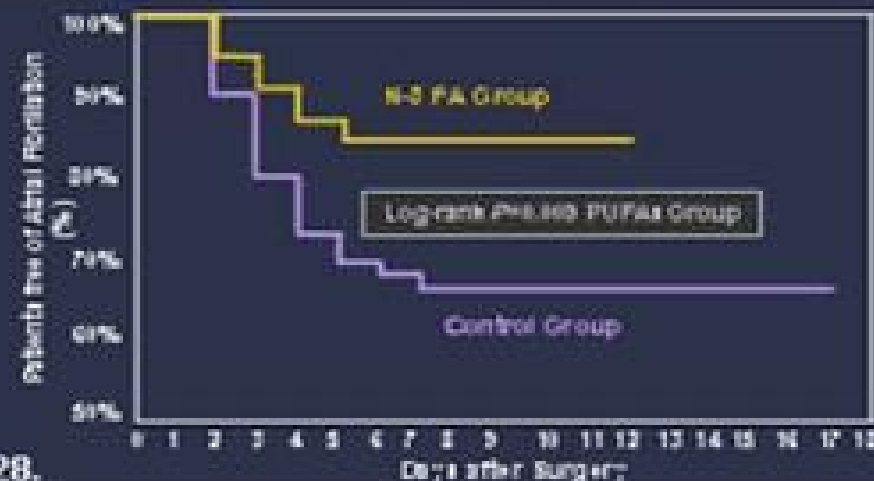
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## Omega-3 for Prevention of Post-CABG AF

- 160 patients awaiting CABG
- Randomized to usual care or EPA+DHA (1.7 g/d)
- From 5 days pre-surgery through hospitalization
- Endpoint was AF detected by ECG during hospitalization. AF >5 min or requiring intervention

	Control (n=81)	N-3 FA (n=79)	p
Post CABG AF	33%	15%	.013
Hours of AF	24	16	.125
Length of Stay	8.2 days	7.3 days	.017



Calo L, et al. *J Am Coll Cardiol.* 2005;45:1723-1728.



# Objective

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- ◆ Studiul este deschis si prospectiv avand ca si obiectiv principal evaluarea efectului uleiului de canepa asupra lipidelor serice (in special asupra trigliceridelor), precum si asupra echilibrului glicemic;
- ◆ Uleiul de canepa presat la rece folosit in studiul nostru este produs de catre "CANAH INTERNATIONAL" la Salonta, jud Bihor si are ca si caracteristici un continut foarte ridicat in acizi grasi polinesaturati si un raport optim intre acidul linoleic si acidul alfa-linoleic.



# Design studiu

## Inrolare

- 9 pacienti cu DZ tip 2
- vechime DZ mai mare de 6 luni
- tratament hipoglicemiant stabil in ultimele 3 luni
- trigliceride serice peste 150mg%
- tratati cu fenofibrat de cel putin 6 saptamani

## Vizita 1

- Examen clinic general
- Date antropometrice
- Dozare: TG, HDL-col, col total, glicemie, HbA1c
- Administrare 10ml ulei canepa/zi dimineata, inainte de micul dejun

## Vizita 2

- dupa 6 saptamani -

- Examen clinic general
- Date antropometrice
- Dozare: TG, HDL-col, col total, glicemie, HbA1c
- Evaluarea tolerabilitatii

## Vizita 3

-dupa 6 saptamani -

- Examen clinic general
- Date antropometrice
- Dozare: TG, HDL-col, col total, glicemie, HbA1c

# Caracteristicile lotului

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- ◆ 22,2% femei, 77,2% barbati
- ◆ varsta medie 47,89 ani
- ◆ durata medie a diabetului 5,85 ani
- ◆ 3 pacienti insulinotratati
- ◆ 88,9% hipertensivi
- ◆ 44,4% terapie combinata hipolipemianta (fibrat si statina)



# Rezultate

◆ Trigliceride (mg/dl)





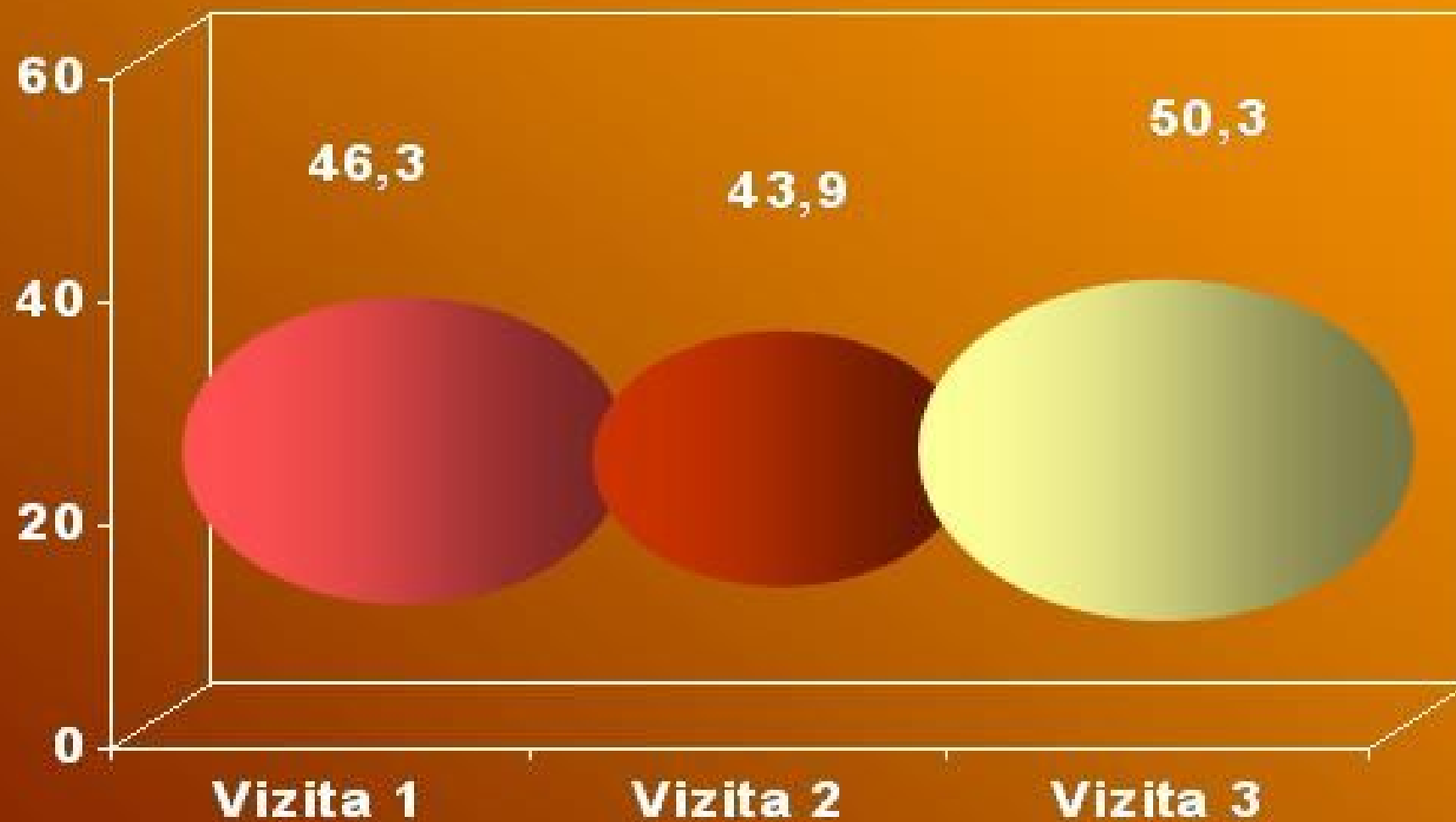
# Rezultate

◆ Colesterol total (mg/dl)



# Rezultate

◆ HDL-colesterol (mg/dl)



# Rezultate

★ Glicemie (mg/dl)

