



Metabolisme Lemak

Pemeriksaan Laboratorium & Interpretasi

Iman Sukiman

Pemeriksaan Met. Lemak

- ✦ Profil Lemak
 - ✦ Total Kolesterol
 - ✦ Trigliserida
 - ✦ HDL
 - ✦ LDL

Pemeriksaan Kolesterol

- ✦ Direct procedures
 - ✦ Liebermann-Burchard
- ✦ Extraction procedures
- ✦ Chop-pap

Pemeriksaan triglyceride

- ✱ 1 glycerol dehydrogenase
- ✱ 2.glycerol kinase couple with pyruvatekinase and lactate dehydrogenase
- ✱ 3.glycerol kinase and glycerol-3-phosphate dehydrogenase (NAD⁺)
- ✱ 4.NAD⁺,triosephosphate isomere and G3PH

Total Cholesterol

- ✦ Makin tua kadar chol makin tinggi
- ✦ Bad chol dan good chol
- ✦ Total chol meningkat ~ MCI, Stroke dan peny. perifer-al-vaskular

✦ Rekomendasi	hati-hati	resiko
✦ < 200 mg%	200 – 220	> 220

Total Cholesterol/ umur

★ Age	pria	wanita
★ 10-14	165	165
★ 15-19	159	165
★ 20-29	180	180
★ 30-39	205	190
★ 40-49	215	210
★ 50-59	215	220

Trigliserida

- ✦ Normo hati-hati resiko
- ✦ < 200mg% 200- 300 mg% > 300
- ✦ Hypertriglyceridemia ~ LDL small particle >
- ✦ Meningkatkan pada Chylomicron dan VLDL

HDL

- ★ Secara ultra centrifuge HDL- 1

- ★ HDL - 2

- ★ HDL - 3

- ★ Good chol.

- ★ Normo hati-hati risiko

- ★ Lk > 55 < 45 < 35 mg/dl

- ★ Pr > 45 < 35

LDL

- ★ Rumus Friedewald harus \rightarrow Tg $<$ 400mg%

- ★ Enzymatik

- ★ Normo

hati-hati

resiko

- ★ < 150

150 – 190

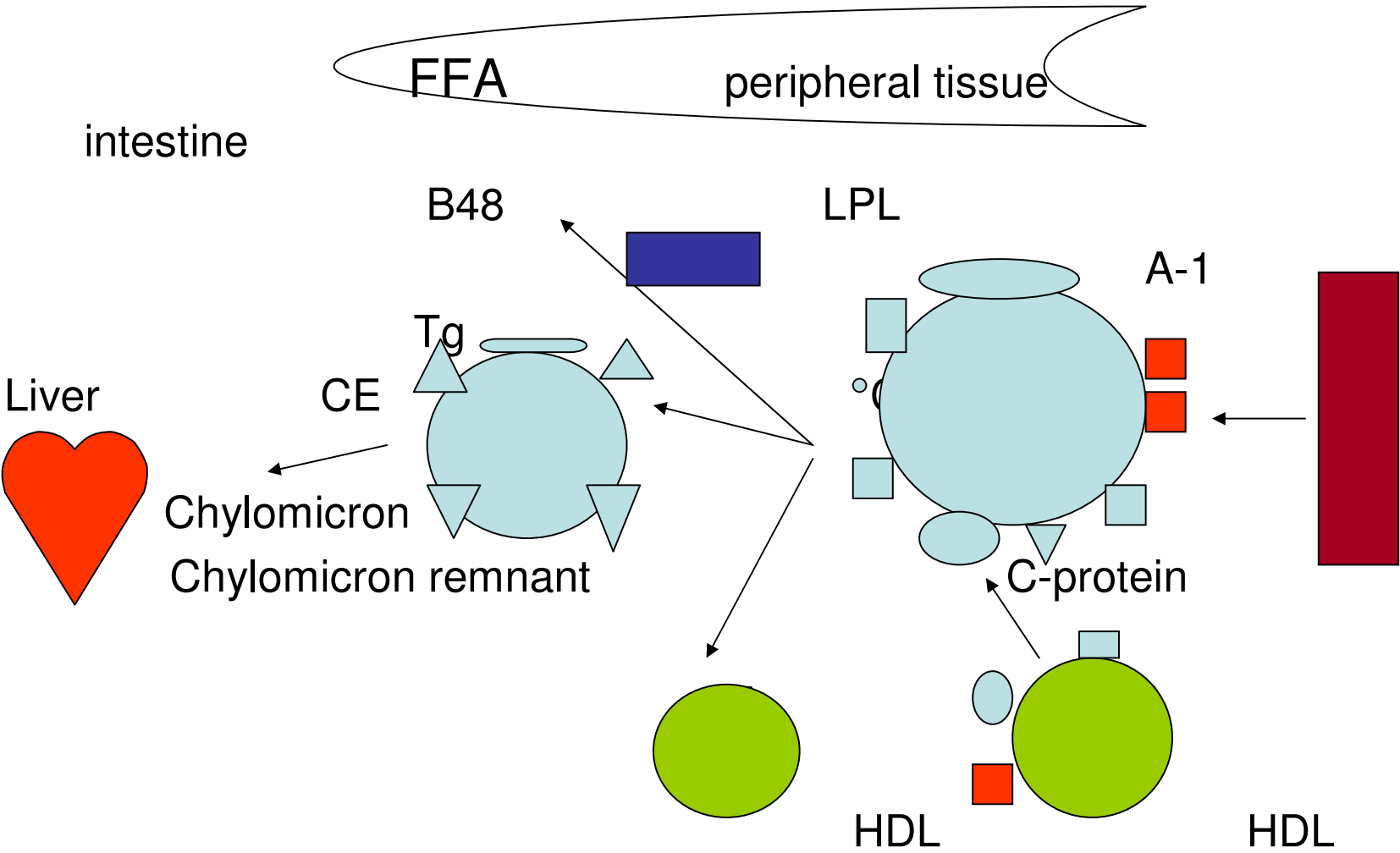
> 190 mg%

- ★ LDL receptor

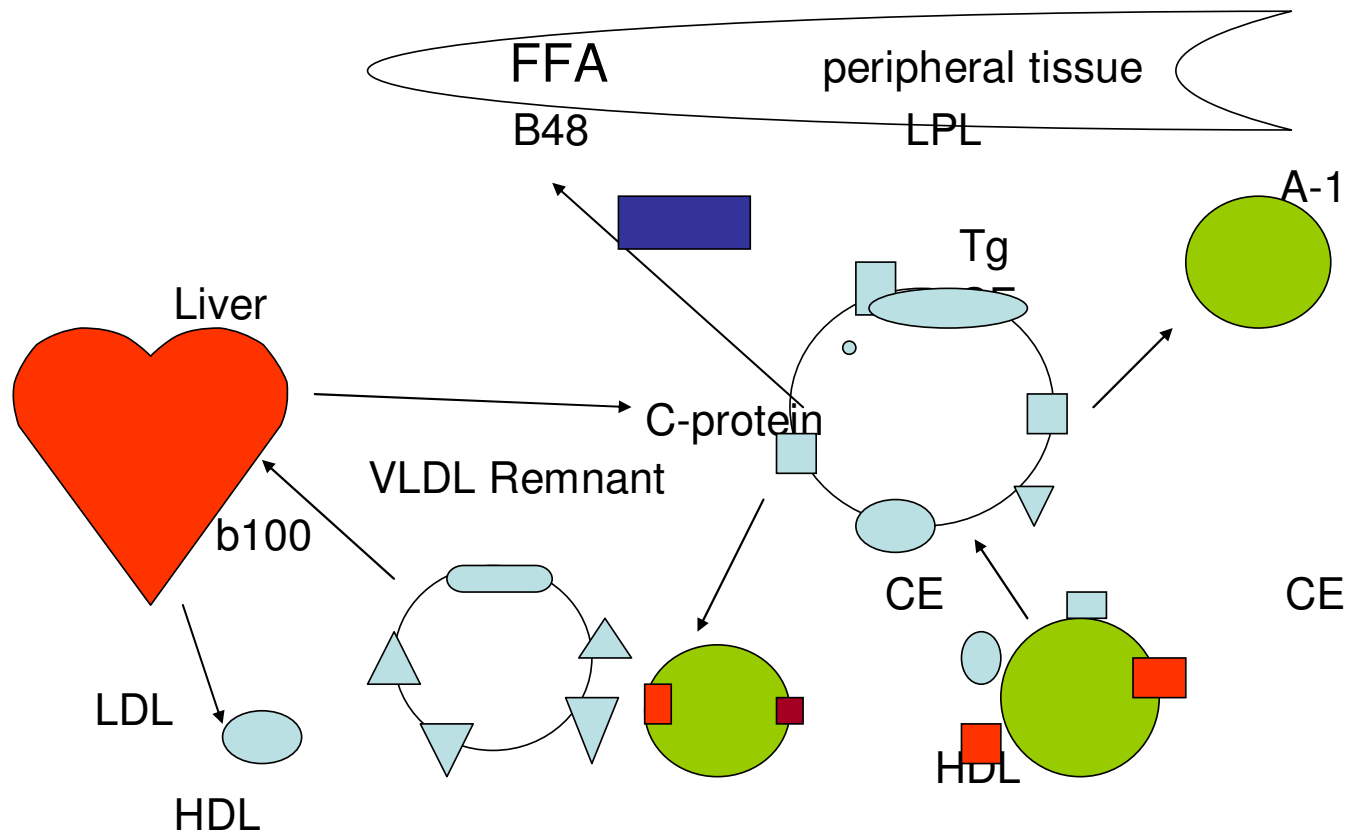
Ultra centrifuge / elektroporesis

- ✦ Chylomicron
- ✦ VLDL, I - VLDL
- ✦ HDL 1, 2 dan 3
- ✦ LDL : dense particle LDL
- ✦ low particle LDL

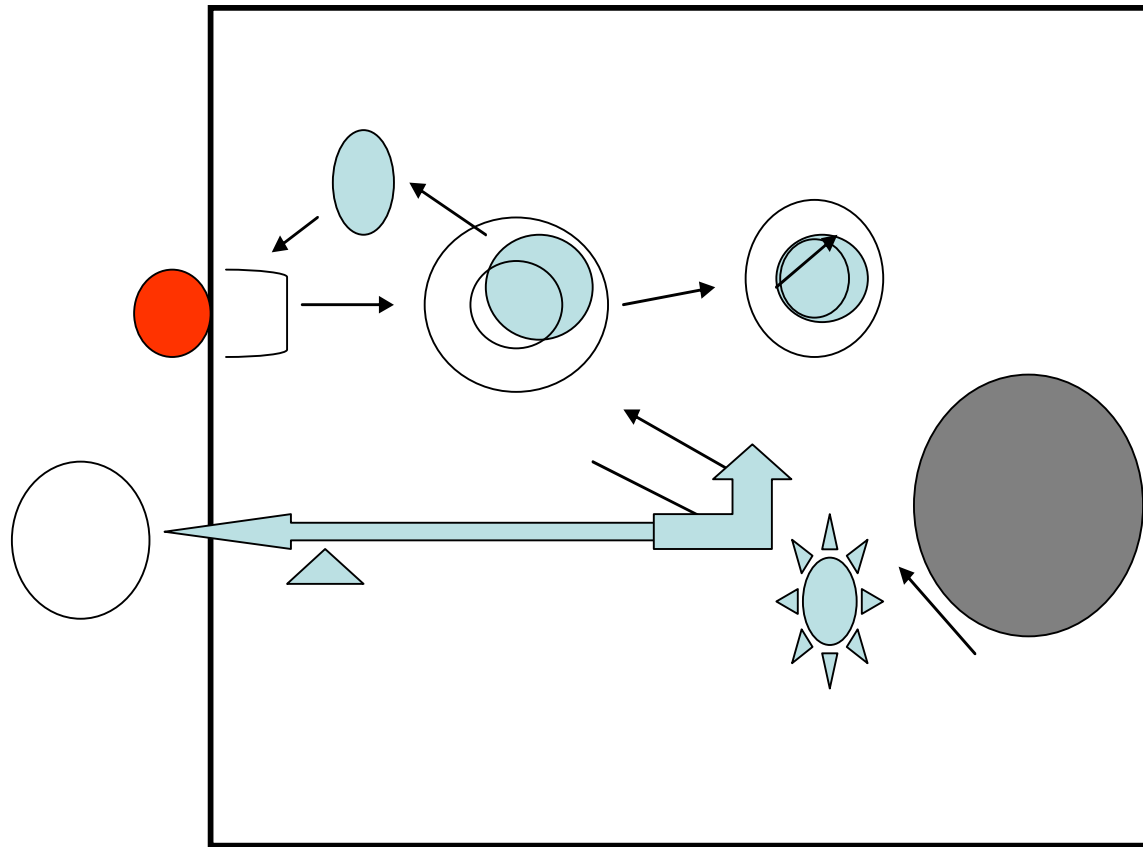
Metabolism of Chylomicrons



Metabolisme VLDL



Cholesterol Homeostasis in the cell





Lain-lain

- ✦ Total lipid
- ✦ phospholipid
- ✦ Apoprotein B
- ✦ Apoprotein A
- ✦ Apoprotein E
- ✦ Lipoprotein a

Hiperlipidemia Familiar

Type	Predom > lipoprotein	Predom. > lipid	contoh
I	Chylomicron	Trigliserida	LPL def.
IIa	LDL	Cholesterol	Fa hyp-chol
IIb	VLDL/LDL	TRI./Chol	Fa com hyp
III	Beta VLDL	Tri/Chol	Tipe3 hyp
IV	VLDL	Tri	Fa hyp tri
V	Chylo./ VLDL	Tri/ chol	Apo CII def



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