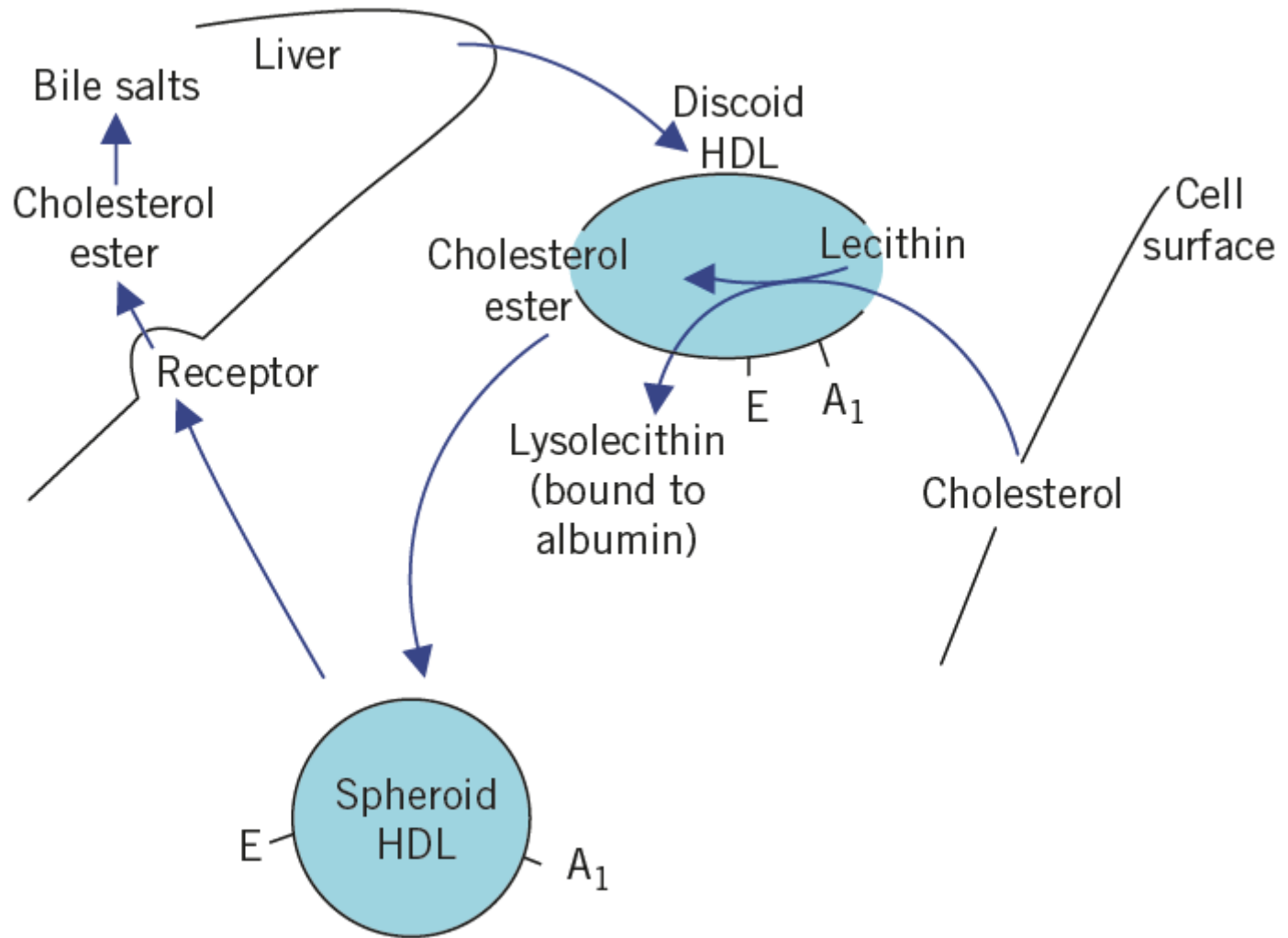
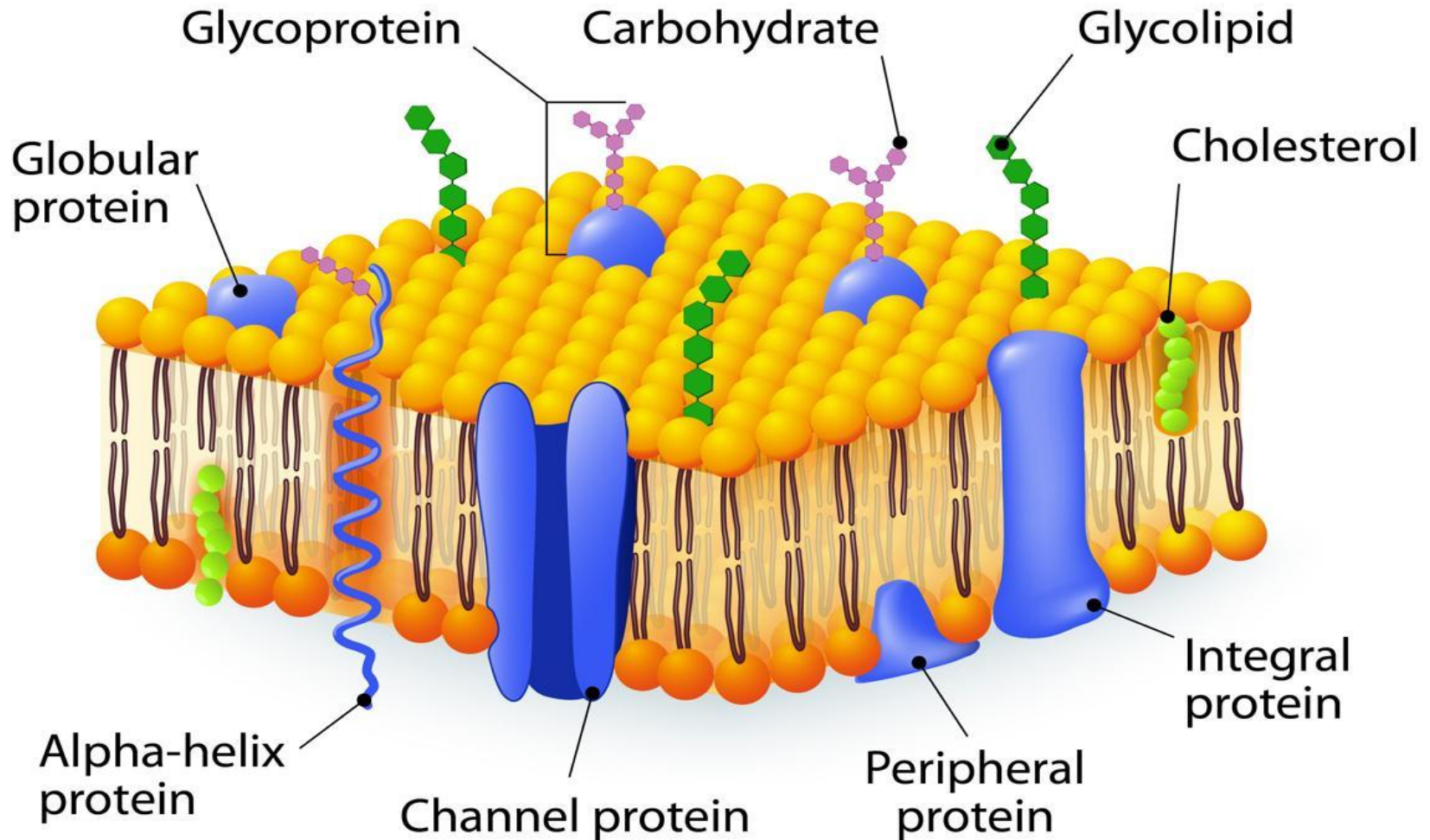


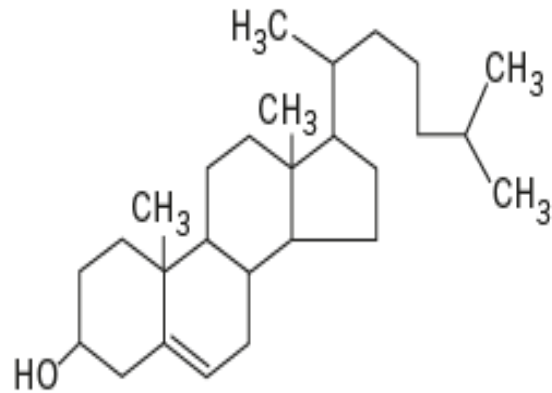
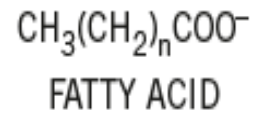
Dyslipidemia

The name has been changed from
hyperlipidemia to dyslipidemia?

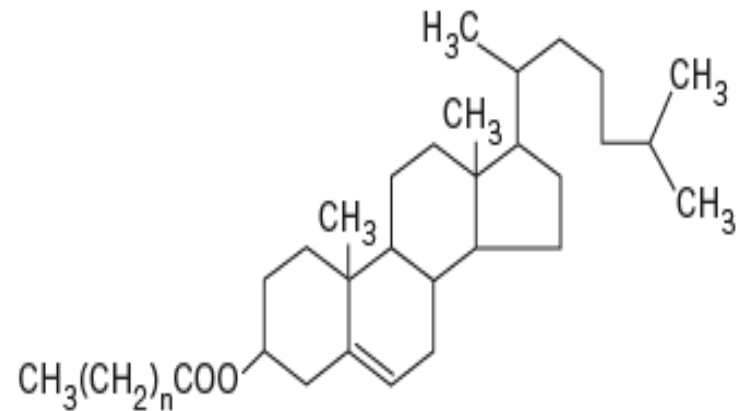


Fluid mosaic theory

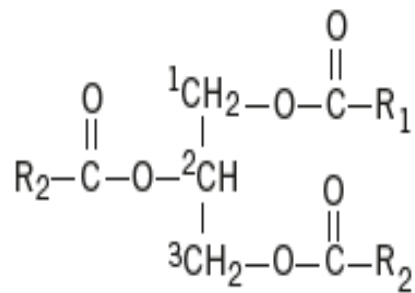




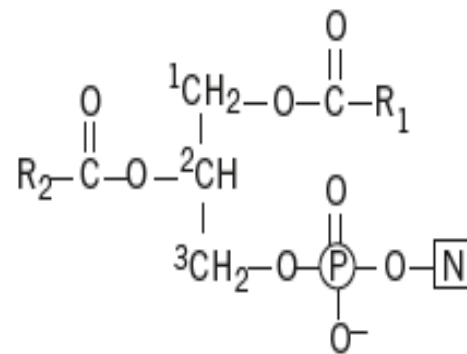
CHOLESTEROL



CHOLESTEROL ESTER



TRIGLYCERIDE



PHOSPHOLIPID

Normal physiology

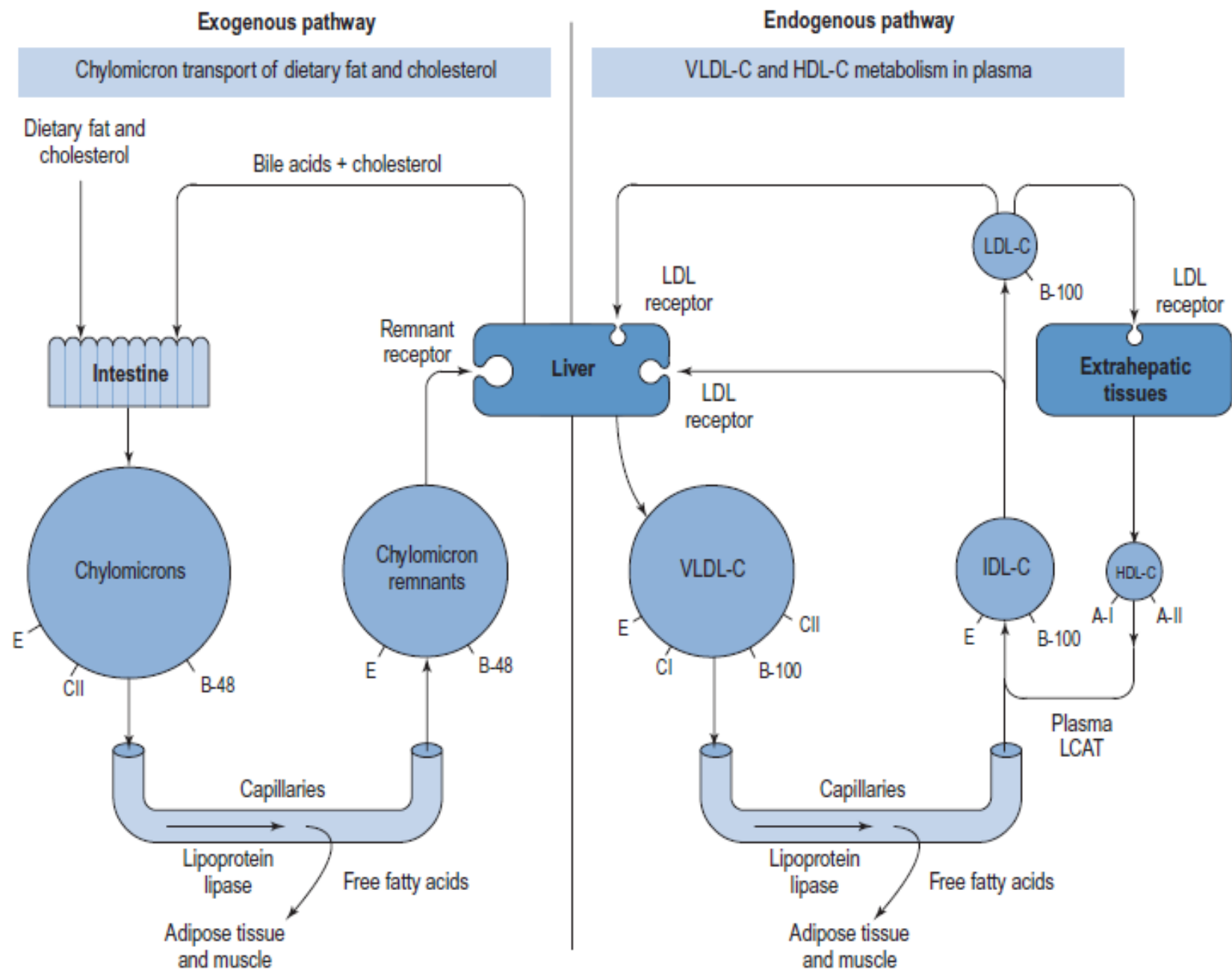


Figure 24.1 Schematic representation of lipoprotein metabolism in plasma. Dietary cholesterol and fat are transported in the exogenous pathway. Cholesterol produced in the liver is transported in the endogenous pathway.

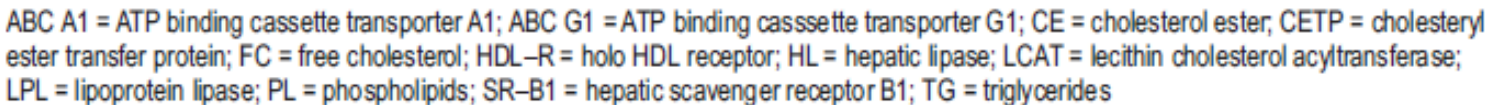


Fig. 24.2 Pathways of reverse cholesterol transport in man (Chapman et al. 2010 with kind permission from Oxford University Press, Oxford).

Types of dyslipidemia

Primary
and secondary

Primary DL

Familial ?

Primary DL

Mainly into 3 classes

1. F. Hypercholesterolemia
2. F. Hypertriglyceridemia
3. F. Combined hyperlipidemia

Characteristics of major lipoproteins

Lipoprotein	Source	Composition (% mass)				Apolipoprotein	Electrophoretic mobility
		Pro	Cho	Tg	PL		
Chylomicrons	Gut	1	4	90	5	A, B, C, E	Origin
VLDL	Liver	8	25	55	12	B, C, E	Pre- β
LDL	VLDL via IDL	20	55	5	20	B	β
HDL	Gut/liver	50	20	5	25	A, C, E	α

Fredrickson's classification of hyperlipidemias

Type	Electrophoretic	Increased lipoprotein
I	Increased chylomicrons	Chylomicrons
IIa	Increased β -lipoproteins	LDL
IIb	Increased β and pre- β -lipoproteins	LDL and VLDL
III	Broad β -lipoproteins	IDL
IV	Increased pre- β -lipoproteins	VLDL
V	Increased chylomicrons and pre- β -lipoproteins	Chylomicrons and VLDL

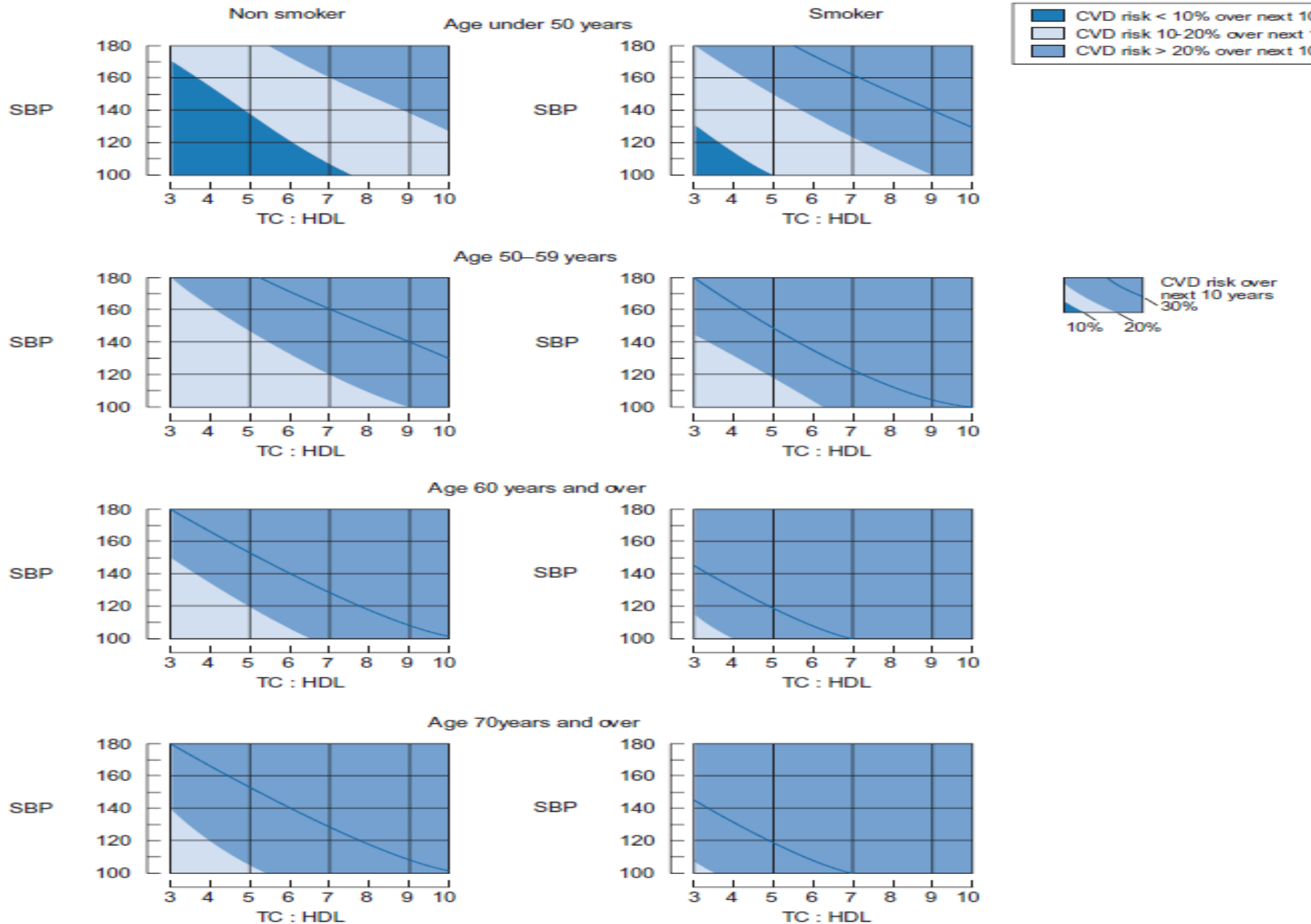
Secondary DL

- DM 1,2
- Hypothyroidism
- Chronic renal failure
- Nephrotic syndrome
- Obesity
- Alcohol
- Drugs (diuretics , B blockers , OCPs , corticosteroids , ciclosporin , enzyme inducers)

Primary prevention of stroke and MI

Risk assessment

NON-DIABETIC MEN



4.3 Joint British Societies' cardiovascular disease risk prediction chart for non-diabetic men 2009 (reproduced with permission of the University of Manchester). SBP, systolic blood pressure mmHg; TC:HDL, serum total cholesterol to HDL cholesterol ratio.

Secondary prevention (treatment)

Lipid profile

(Friedewald equation)

Life style change

Drugs

1. Statins
2. Fibrates
3. Cholesterol binders
4. Cholesterol absorption inhibitors
5. Nicotinic acid





A 15-year-old woman presented to the surgical unit with acute pancreatitis. Some of her laboratory results were as follows:

Plasma (fasting)

Cholesterol 33.4 mmol/L (3.5–5.0)

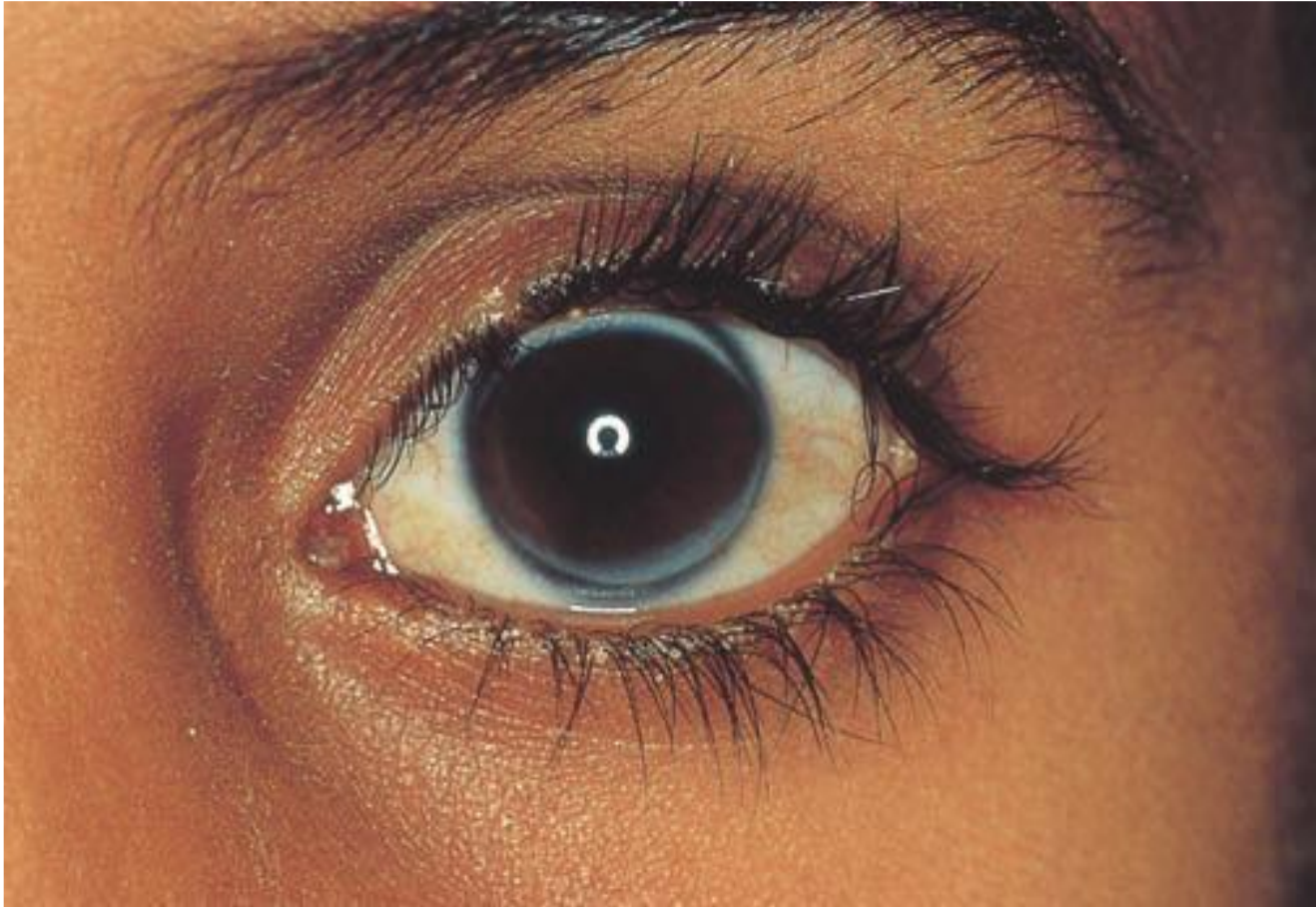
Triglyceride 69.1 mmol/L (0.3–1.5)

HDL cholesterol 0.9 mmol/L (1.0–1.8)

Amylase < 20 U/L (<200)

On examination, she had eruptive xanthomata on her arms and thighs and fundoscopy revealed lipaemia retinalis.





A 23-year-old woman had her plasma lipids checked by her general practitioner because her father had died of a myocardial infarction aged 44 years. Her 24-year-old brother had hyperlipidaemia. Her renal, liver and thyroid function tests were normal, as was her blood glucose.

Plasma (fasting)

Cholesterol 11.4 mmol/L (3.5–5.0)

Triglyceride 1.1 mmol/L (0.3–1.5)

HDL cholesterol 1.2 mmol/L (1.0–1.8)

On examination, she had tendon xanthomata on her Achilles tendons and bilateral corneal arc.

A 43-year-old man attended the vascular surgery outpatient clinic for peripheral vascular disease. He was a non-smoker but had undergone a coronary artery bypass graft the year before. Some of his laboratory results were as follows:

Plasma (fasting)

Cholesterol 8.7 mmol/L (3.5–5.0)

Triglyceride 9.1 mmol/L (0.3–1.5)

HDL cholesterol 0.86 mmol/L (1.0–1.8)

His apolipoprotein E genotype was E2/E2

On examination, he had tuberous xanthomata and palmar striae.





Thank you