



# Diabetes and the skin



## Part 1 – tender skin lumps

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‘I have got these ugly tender lumps all over me. I do not like going out because people might stare at me and it’s uncomfortable sitting because they are all over my bum’.

### Question 1

What are the lesions?

### Question 2

What dangerous complications can occur?

### Question 3

What management would you recommend for Sarah?

### Answer 1

These are typical eruptive xanthomas associated with severe hypertriglyceridaemia. Usually they concentrate in skin areas subject to pressure (eg. elbows, knees, buttocks) but can be widespread (as in Sarah’s case). The high triglyceride levels reflect accumulation of chylomicrons (absorbed from the gut) and very low density lipoprotein (produced by the liver). Particles accumulate partly because of increased hepatic formation and partly because of decreased peripheral clearance.

Common causes of severe hypertriglyceridaemia are uncontrolled diabetes and high ethanol intake. Other



### Case history – Sarah

Sarah has poorly controlled type 2 diabetes (A1c consistently over 10%, also known as glycosylated haemoglobin, glycated haemoglobin or HbA1c; target levels <7%) associated with hypertension and dyslipidaemia. She often misses or stops her medication preferring natural remedies recommended by her friends. Her lifestyle is not ideal as she ‘likes all the wrong things’, has a sedentary job as a computer operator, and continues to watch the screen at home, snacking in front of the television. She enjoys partying with her friends; sometimes occasions for a high ethanol intake.

**Table 1. Causes of severe hypertriglyceridaemia**

	<b>Primary</b>	<b>Secondary</b>
<b>Overproduction</b>	Familial hypertriglyceridaemia Familial combined hyperlipidaemia	Insulin resistance (eg. obesity, exogenous oestrogens, glucocorticoid excess) Alcohol
<b>Decreased clearance (impaired lipoprotein lipase activity)</b>	Primary lipoprotein lipase deficiency (rare)	Insulin deficiency Hypothyroidism Uraemia

causes are shown in *Table 1*. In diabetes, a high ethanol intake can result in extremely high triglyceride levels (exceeding 20 mmol/L). The American Diabetes Association suggests limiting ethanol intake to one drink

per week for people with type 2 diabetes and hypertriglyceridaemia (the NHMRC recommends 1 or 2 drinks of 10 g ethanol per day for healthy women and men respectively).

## Answer 2

When chylomicron and VLDL particles accumulate, the plasma becomes cloudy and can result in lipaemia retinalis where retinal blood vessels take on a whitish tinge. Lipaemia can precipitate abdominal pain and pancreatitis which can be life threatening. Episodes of abdominal pain and pancreatitis can be recurrent if the hypertriglyceridaemia is not controlled. Abdominal pain or pancreatitis associated with hypertriglyceridaemia requires hospital admission and emergency intravenous insulin infusion to control excess production and increase peripheral removal.

## Answer 3

Fortunately Sarah does not have pancreatitis (yet), however the same approach applies – reduce production and increase clearance by controlling her metabolic abnormality with oral hypoglycaemic agents and insulin if needed. Lifestyle will be important as eating and drinking less, and walking more will decrease her weight, waist and insulin resistance.

Increasing insulin activity by increasing insulin levels and/or sensitivity will decrease triglyceride production and increase peripheral removal. Decreasing ethanol intake will decrease hepatic triglyceride production. The addition of hypolipidaemic agents will probably be necessary as well (fibrates and possibly nicotinic acid). In Sarah's case, changing her lifestyle is likely to be an absolute requirement for controlling or not controlling triglyceride levels. Sarah should appreciate that these 'lumps' potentially can occur anywhere on her body and if she does not control her blood fats she is at high risk of a life threatening complication (pancreatitis). She may also be impressed by the potential cosmetic and comfort benefits of getting rid of the lumps and becoming a little trimmer.

Conflict of interest: none declared.

AFP

## Correspondence

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*Australian Family Physician* is pleased to present a new monthly column of medical poetry that resonates with the month's theme. Dr Tim Metcalf will introduce us to some of Australia's leading doctor-poets, and then will be welcoming submissions of reader's work.

# 'The ethicist'

*It's no dead easy simple role  
To satisfy a nation's soul  
The ethicist at large must deal  
With problems by no means genteel,  
Like concept of informed consent  
In medical experiment,  
Or pro-choice versus right-to-life  
And like as not get into strife.*

*While striving hard to keep the peace  
With clergy, politics and police  
A doctor, duteous is loath  
To break the Hippocratic oath  
So one who resolutely strives  
To heal and salvage ailing lives  
Would not in line of duty kill,  
But did he, should he send the bill?*

Len Green