

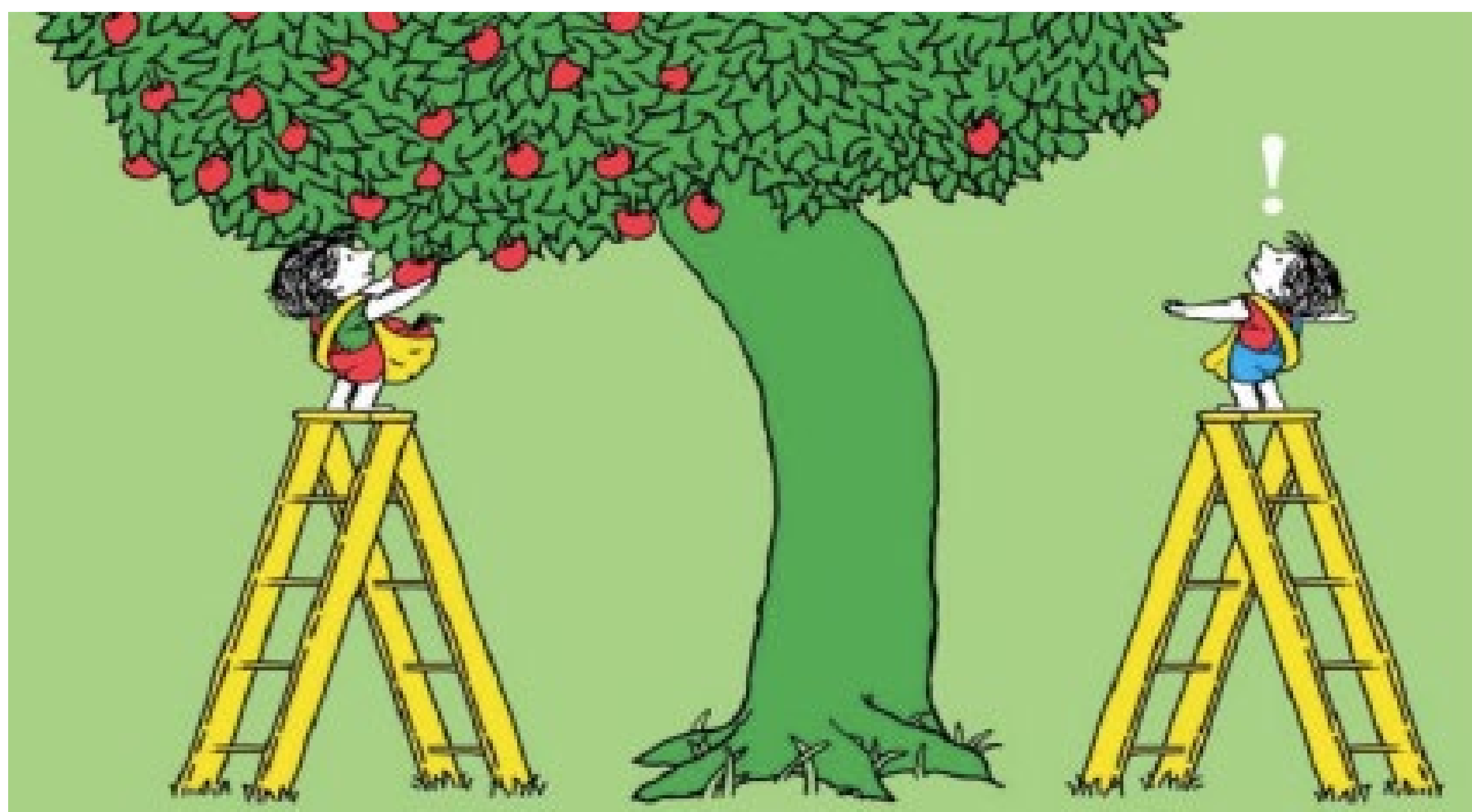
Equity with Radiation Induced Reaction Assessment



Naman Julka-Anderson
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Equality



Consent Forms

Possible early or short-term side-effects

Start during radiotherapy or shortly after completing radiotherapy and usually resolve within two to six months of finishing radiotherapy. Frequencies are approximate.

Expected
50%–100%



- Tiredness
- Skin soreness, redness, blistering and itching in the treatment area
- Thickened and tenacious secretions
- Dry mouth
- Oral ulcers
- Pain in the mouth and/or throat which can cause problems with swallowing
- Loss or change of taste
- Voice changes
- Cough
- Loss of appetite
- Hair loss in treatment area
- Anxiety, low mood, feeling fed-up or poor sleep

Possible early/short-term side-effects

Start during radiotherapy or shortly after completing radiotherapy and usually resolve within two to six months of finishing radiotherapy. Frequencies are approximate.

Expected
50%–100%



- Tiredness
- Temporary hair loss in treatment area

Common
10%–50%



- Skin soreness, redness and itching in the treatment area

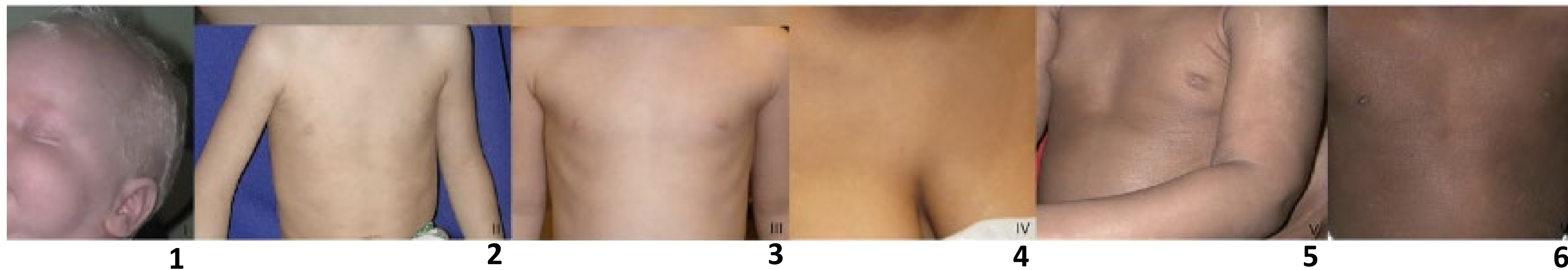
Toxicity Tools

Table 1: Radiation Therapy Oncology Group (RTOG) and Common Terminology Criteria for Adverse Events (CTCAE) scoring for radiation induced skin reactions


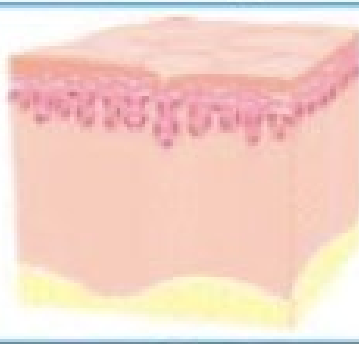

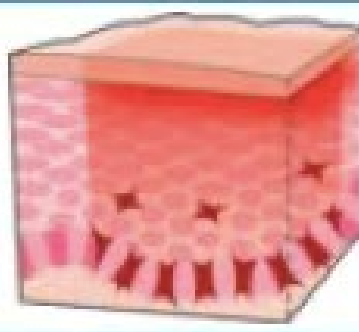

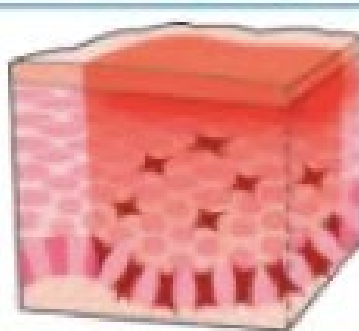

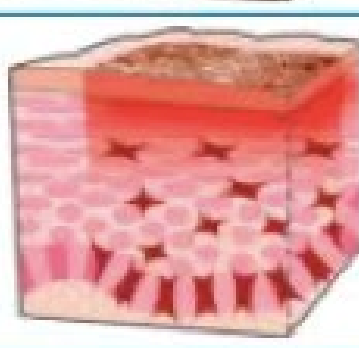

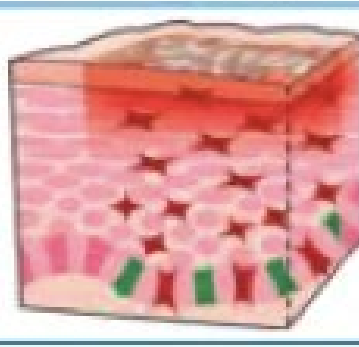
	0	1	2	3	4	5
RTOG	No changes	Faint erythema Dry desquamation Decreased sweating	Tender Bright erythema Moderate oedema Patchy moist desquamation	Moist desquamation in areas other than skin folds Pitting oedema	Ulceration Haemorrhage Necrosis	Death
CTCAE	No changes	Faint erythema Dry desquamation	Moderate erythema Patchy moist desquamation	Moist desquamation in areas other than skin folds Bleeding induced by minor trauma	Life-threatening consequences: full-thickness skin necrosis Spontaneous bleeding	Death

Skin

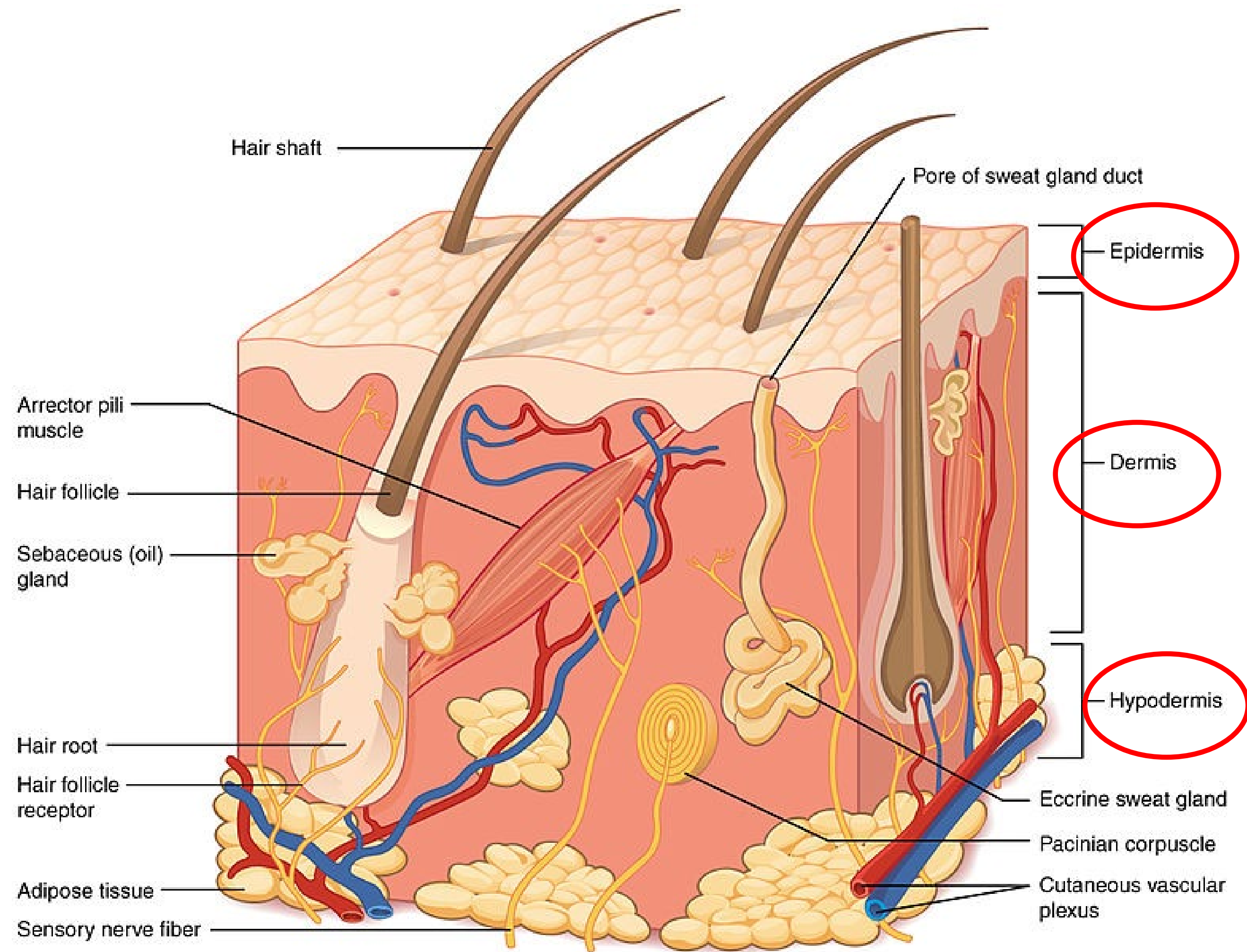
With permission from: ⁷Jothishankar and stein (2019)



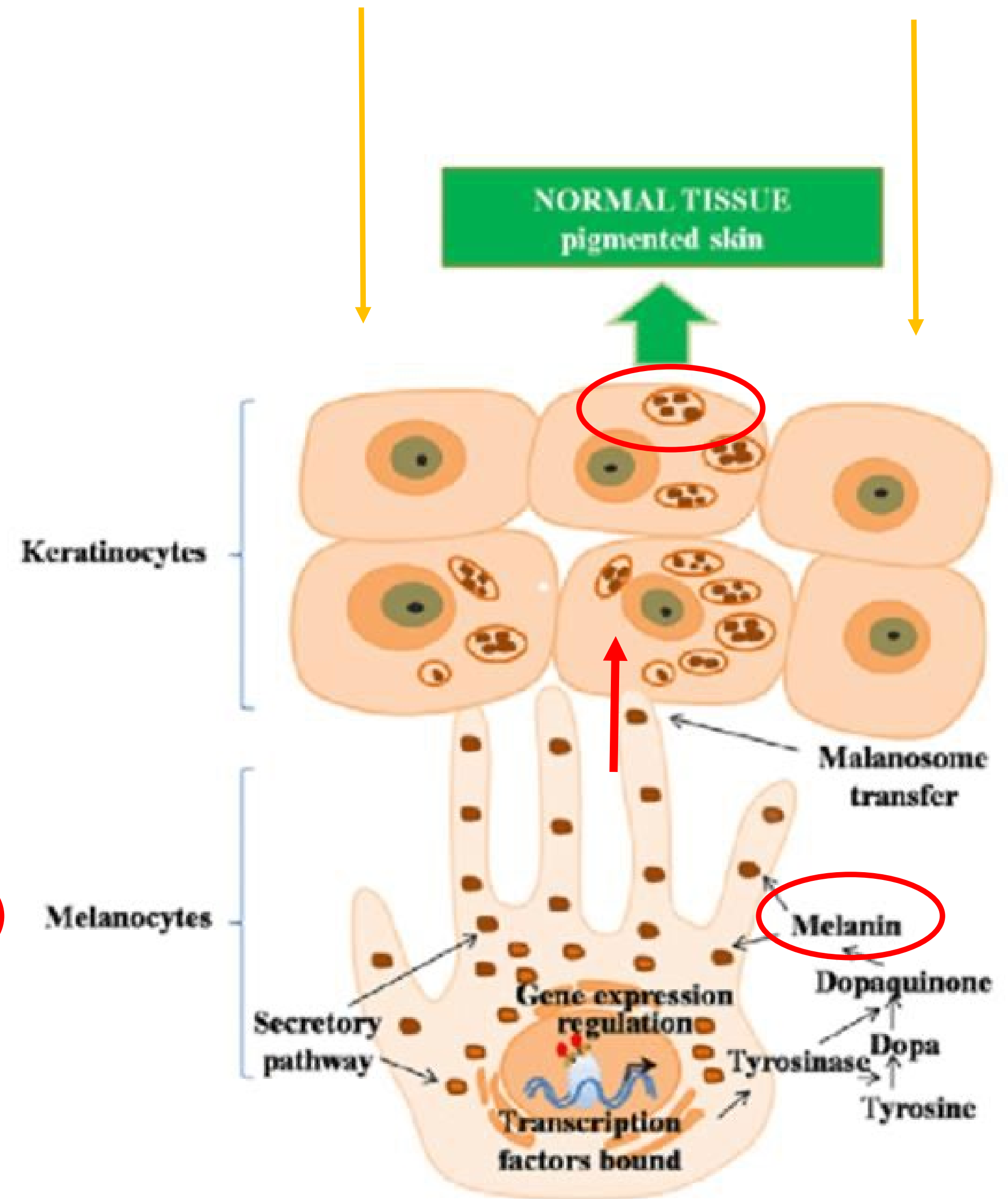
- 57 year old female
- Jamaican heritage
- Dark skin tone
- SCC Left Tonsil
- Severe RISR
- “Text books only show white skin”

<i>Assessment / Observation</i>		<i>Effects of Radiotherapy on Skin Cells</i>
	RTOG 0 No visible change to skin	
	RTOG 1 Faint or dull erythema. Mild tightness of skin and itching may occur	
	RTOG 2 Bright erythema / dry desquamation. Sore, itchy and tight skin	
	RTOG 2.5 Patchy moist desquamation Yellow/pale green exudate. Soreness with oedema	
	RTOG 3 Confluent moist desquamation. Yellow/pale green exudate. Soreness with oedema	
	RTOG 4 Ulceration, bleeding, necrosis (rarely seen)	

Skin



⁵OpenStax College (2013)



⁶Salinas-Santander, Trevino and Rosa (2018)

Consent Forms


Possible early or short-term side-effects

Start during radiotherapy or shortly after completing radiotherapy and usually resolve within two to six months of finishing radiotherapy. Frequencies are approximate.

Expected 50%-100%	<input type="checkbox"/> Tiredness
	<input type="checkbox"/> Skin redness, irritation, itching, flaking, peeling, scaling and dryness in the treatment area
	<input type="checkbox"/> The skin may scab over several times
	<input type="checkbox"/> Skin breakdown in the treatment area - for example oozing, weeping, scabbing and/or bleeding
	<input type="checkbox"/> Hair thinning or loss in radiotherapy area

Possible early or short-term side-effects

Start during radiotherapy or shortly after completing radiotherapy and usually resolve within two to six months of finishing radiotherapy. Frequencies are approximate.

Expected 50%-100%	<input type="checkbox"/> Tiredness
	<input type="checkbox"/> Skin soreness, redness, itching and blistering in the treatment area
	<input type="checkbox"/> Hair loss in the treatment area
	<input type="checkbox"/> Bowel frequency (opening your bowels more often than normal) and urgency (a sudden urge to open your bowels)
	<input type="checkbox"/> Looser stools with more mucous or wind compared to normal
	<input type="checkbox"/> Pain around anus when opening bowels

Possible early or short-term side-effects

Start during radiotherapy or shortly after completing radiotherapy and usually resolve within two to six months of finishing radiotherapy. Frequencies are approximate.

Expected 50%-100%	<input type="checkbox"/> Tiredness
	<input type="checkbox"/> Skin soreness, redness, blistering and itching in the treatment area
	<input type="checkbox"/> Thickened and tenacious secretions
	<input type="checkbox"/> Dry mouth
	<input type="checkbox"/> Oral ulcers
	<input type="checkbox"/> Pain in the mouth and/or throat which can cause problems with swallowing
	<input type="checkbox"/> Loss or change of taste
	<input type="checkbox"/> Voice changes
	<input type="checkbox"/> Cough
	<input type="checkbox"/> Loss of appetite
	<input type="checkbox"/> Hair loss in treatment area
	<input type="checkbox"/> Anxiety, low mood, feeling fed-up or poor sleep

Possible early/short-term side-effects

Start during radiotherapy or shortly after completing radiotherapy and usually resolve within two to six months of finishing radiotherapy. Frequencies are approximate.

Expected 50%-100%	<input type="checkbox"/> Tiredness
	<input type="checkbox"/> Temporary hair loss in treatment area
Common 10%-50%	<input type="checkbox"/> Skin soreness, redness and itching in the treatment area
	

Toxicity tools

Table 1: Radiation Therapy Oncology Group (RTOG) and Common Terminology Criteria for Adverse Events (CTCAE) scoring for radiation induced skin reactions

	0	1	2	3	4	5
RTOG	No changes	Faint erythema Dry desquamation Decreased sweating	Tender Bright erythema Moderate oedema Patchy moist desquamation	Moist desquamation in areas other than skin folds Pitting oedema	Ulceration Haemorrhage Necrosis	Death
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Erythema and 'redness' (adapted from BAD, 2021)

Erythema (from the Greek erythros, meaning red) is a change in colour of an area of skin, caused by increased blood flow. It is a symptom common to many diseases, particularly inflammatory skin diseases.

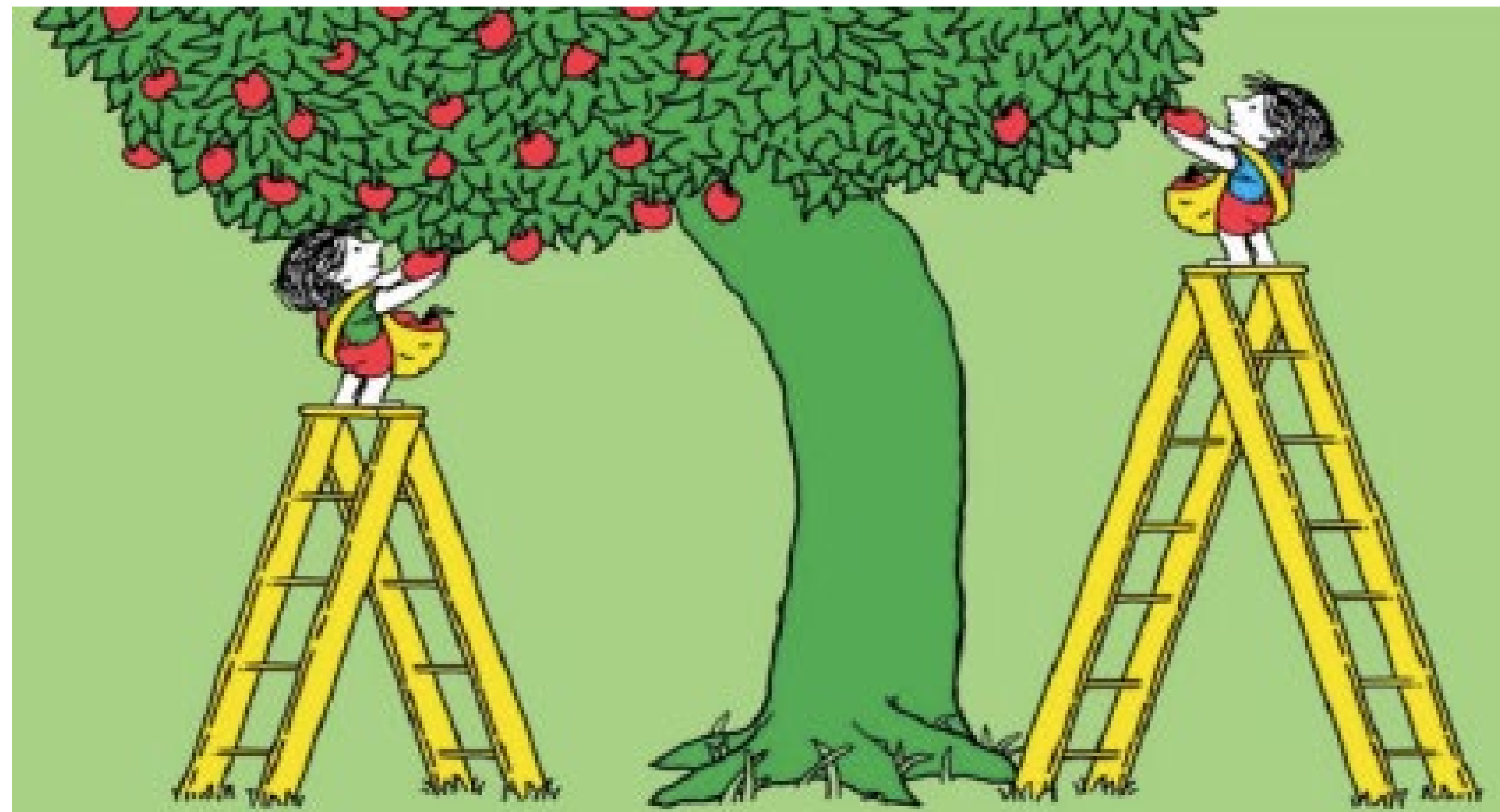
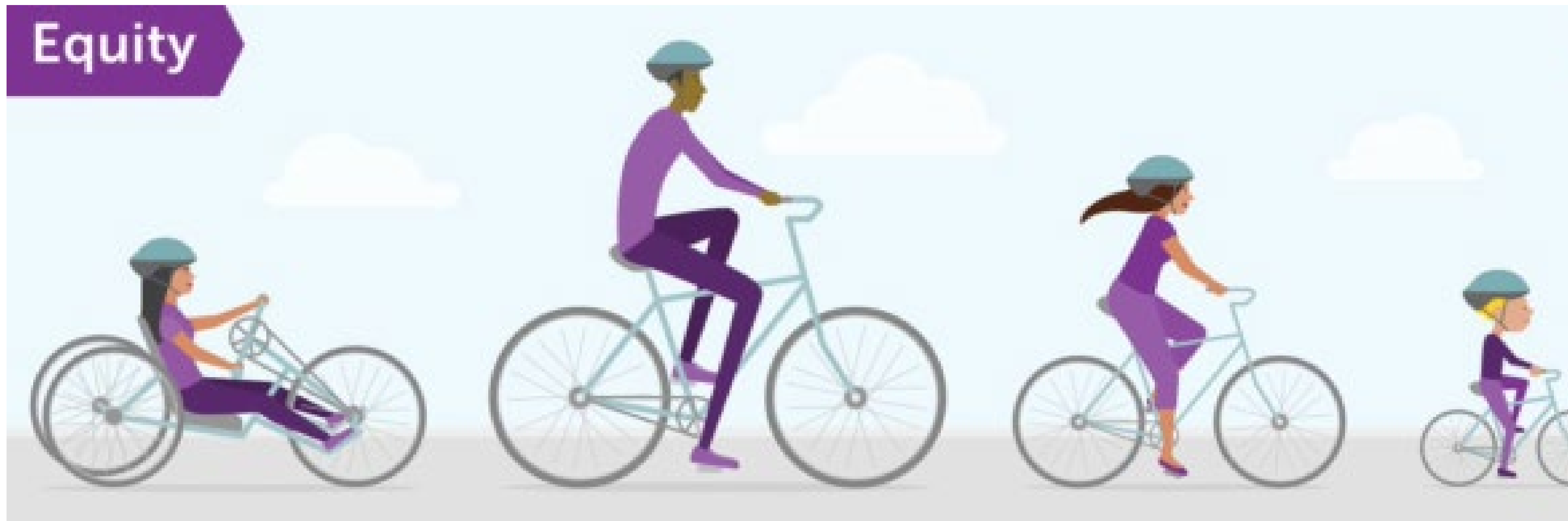
While redness can be an obvious symptom in people with less deeply pigmented skin, where it contrasts clearly against light skin tones, this is not necessarily the case in people with dark skin tones; for example, black, brown and olive skin tones. An example of this is sunburn: it is a common misconception that people with dark skin tones do not burn in the sun. It can happen but may not be easily visible. If it does occur, it may not appear as 'redness' that people generally associate with sunburn.

The term redness itself can be misleading, as the colour change can run the spectrum of pink, red, and purple – in some cases it may be limited to a subtle darkening of the existing skin tone.

While the signs of erythema in dark skin can be easy to miss, there are ways of spotting it. Changes in skin colouration are often the main sign – this can be easier to spot when affected areas are compared with unaffected skin.

There is no straightforward way to predict exactly what colour erythema will look like in an individual's skin. It is dictated by a person's skin tone, of which there are many more variations than most people realise, and the nature of the disease in question.

In addition to this, if you suspect that inflammation is not easy to spot on your patient's skin, then it is sensible to take into consideration other potential symptoms of their condition.

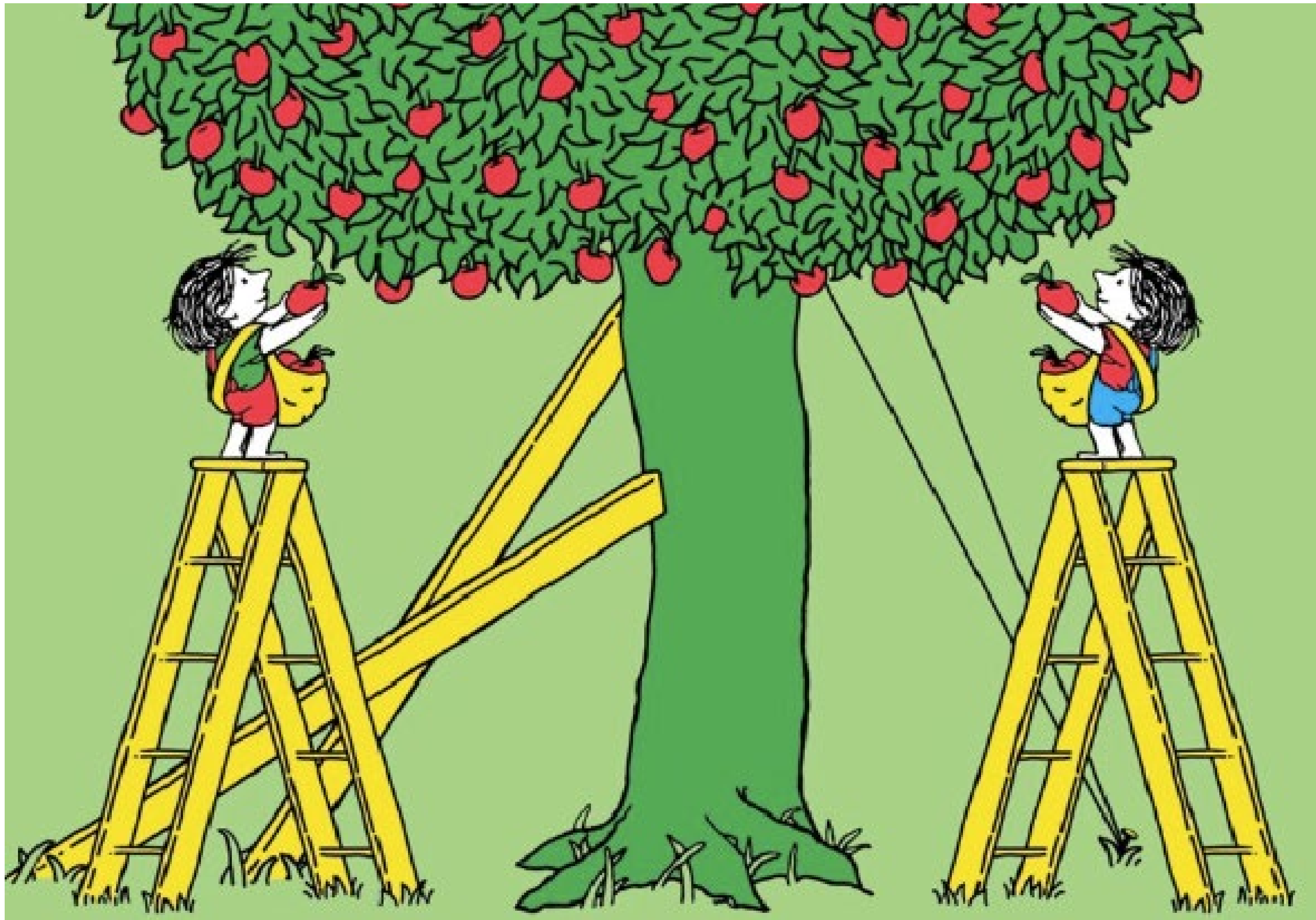


Action points: Assessment

- Use the skin tone tool to assess and record the patient's baseline skin tone
- Do not look for 'redness', but for skin changes
- Use all of the senses, especially touch
- Assess for warmth (use an infrared thermometer if needed)
- Ask the patient about their skin and listen to their perspective
- Use photography for recording and monitoring, rather than as a diagnostic tool, where possible.



Skin tone tool (adapted from Ho and Robinson, 2015)



Structural racism in radiation induced skin reaction toxicity scoring

[Naman Julka-Anderson](#) 

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Abstract

Racially motivated biases are often implicit and can go unnoticed, especially if *your* normal is white and adjustments are required to cater for 'others.' Current consent forms and grading tools within radiotherapy are not inclusive of all skin tones. This commentary highlights gaps in care within radiation induced skin reactions (RISR) assessment for people of colour. Healthcare professionals and patients are directed to look for visual cues such as redness for RISR, but this is not always visible on people with pigmented skin. Their skin may go darker than their normal or changes across the colour spectrum. The lack of understanding of these fundamental differences are leading to people of colour being oppressed through structural racism and racialised myths. Using inclusive terminology will allow for moving away from the current view of healthcare that white skin is the norm. People of colour deserve more than are currently offered in RISR toxicity assessment.

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Thank you

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