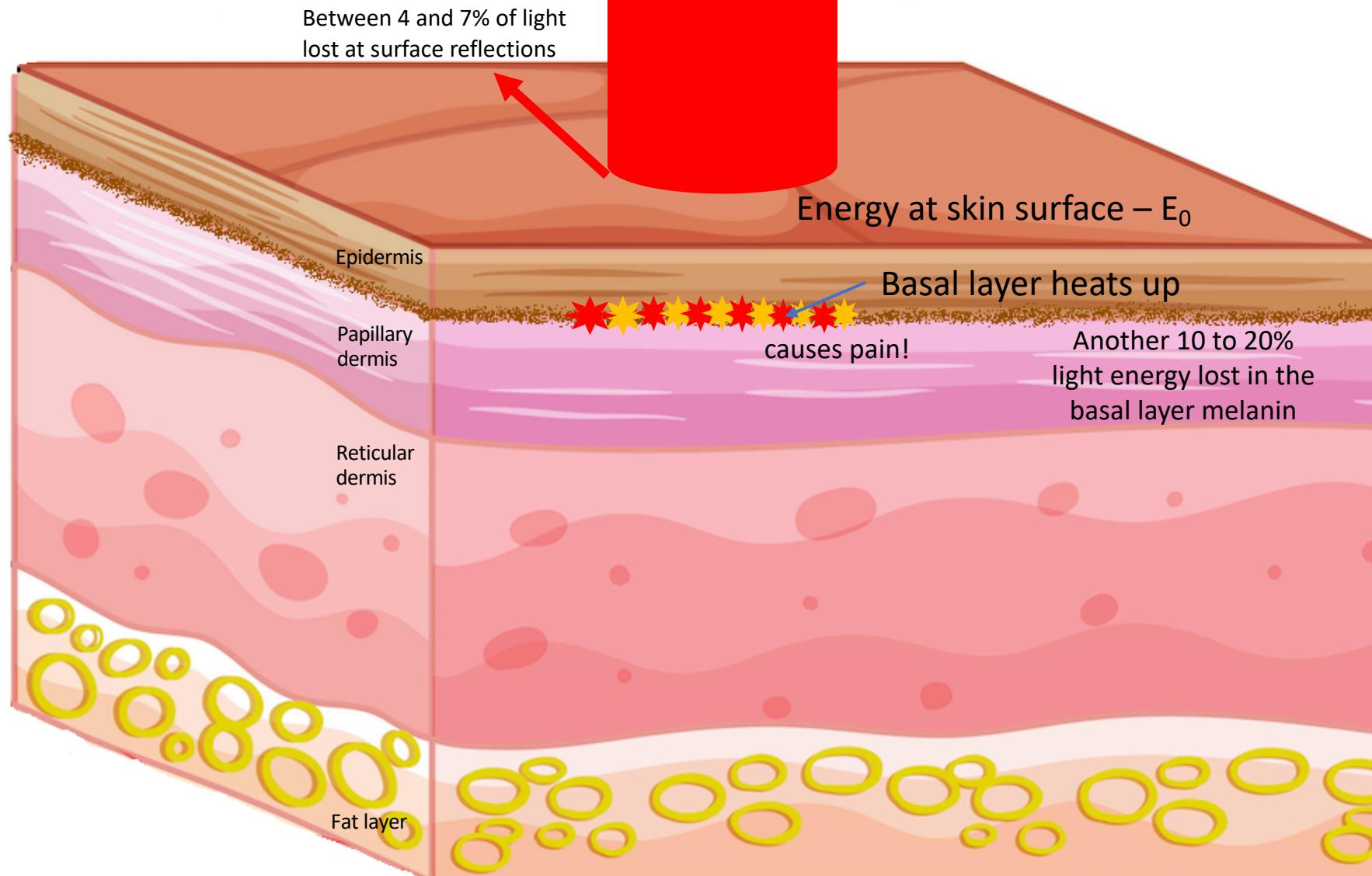


## Light energy absorption in the target

Spot diameter

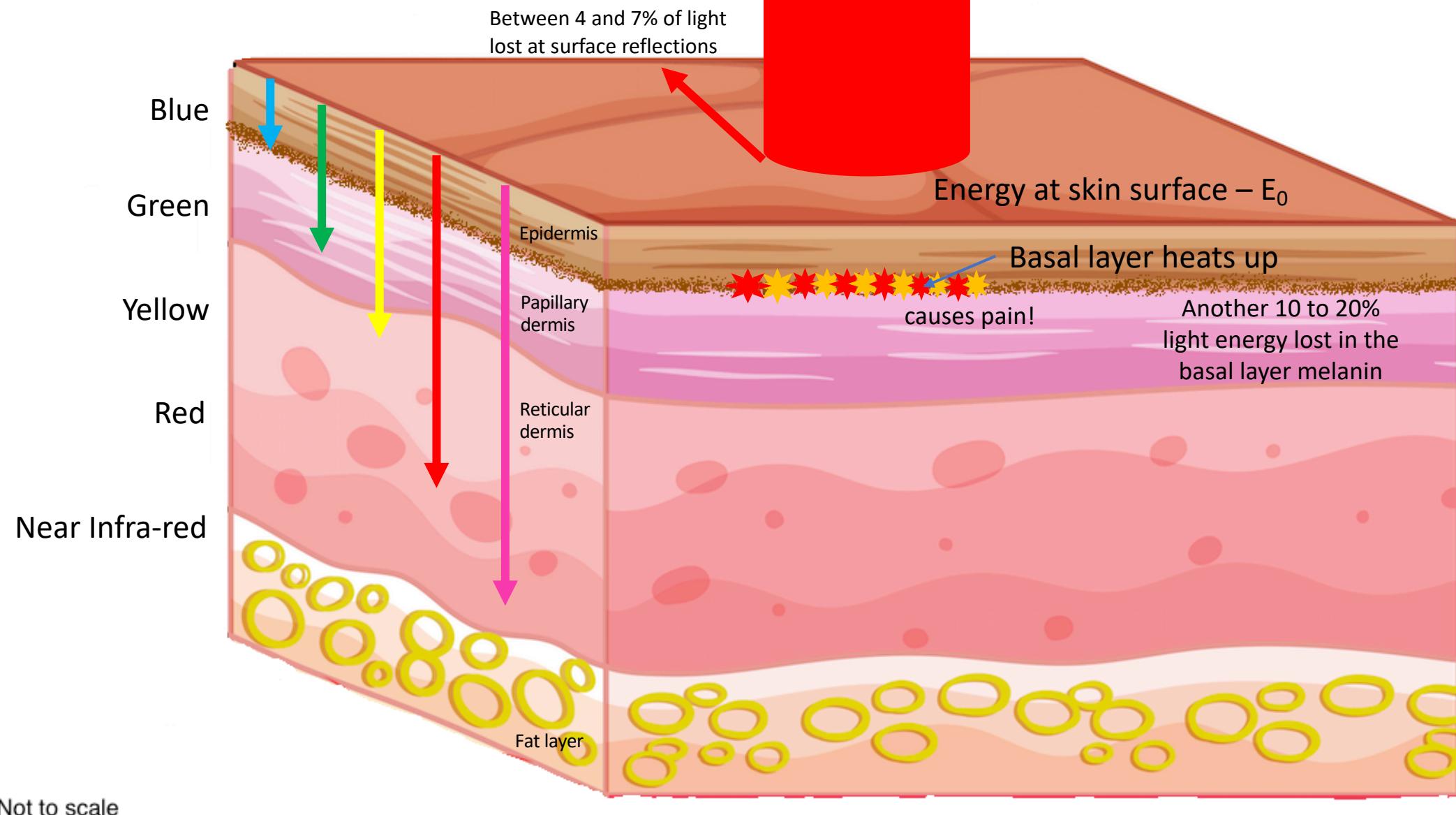
Fluence (= energy / spot size area)



## Light energy absorption in the target

Spot diameter

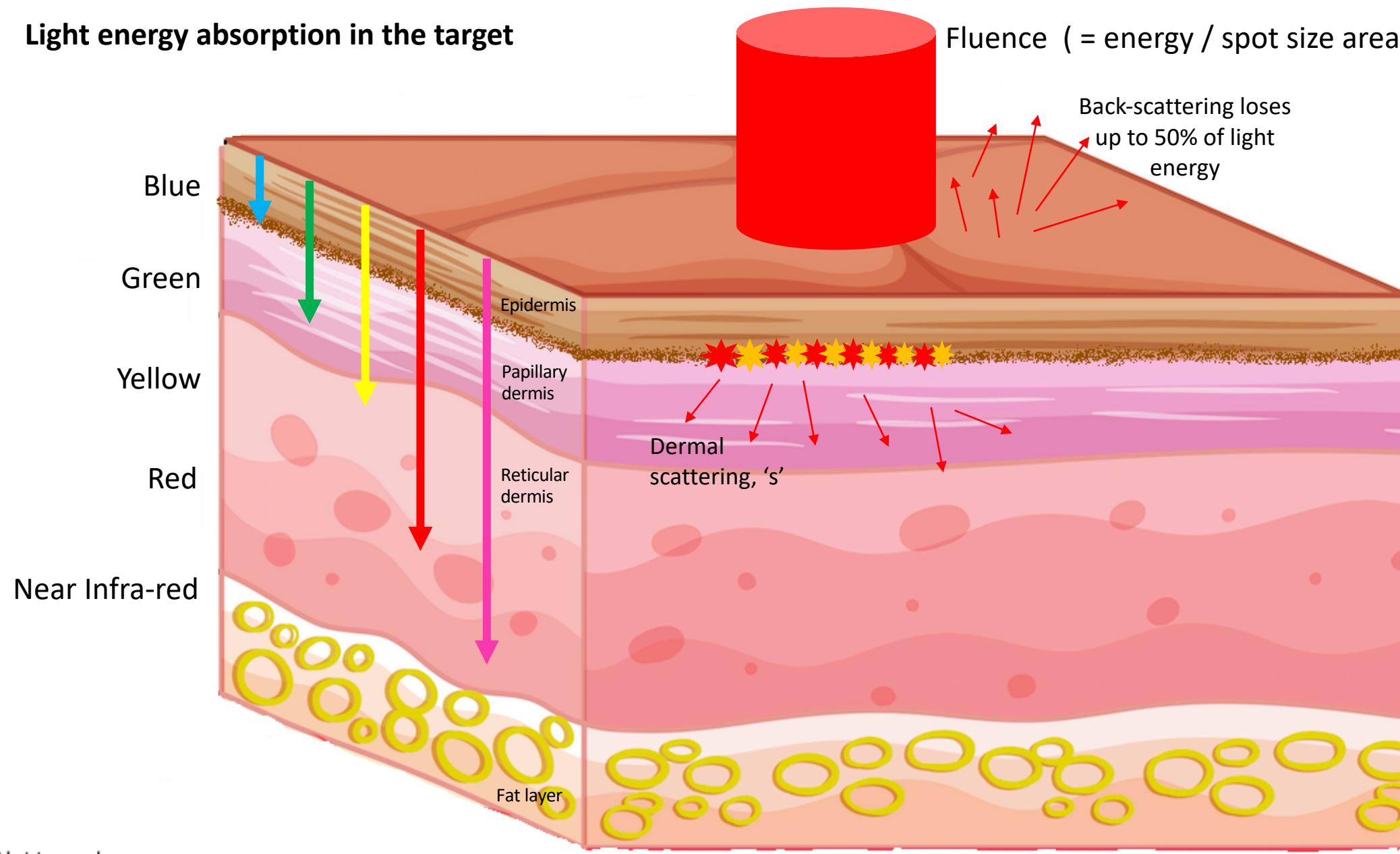
Fluence (= energy / spot size area)



## Light energy absorption in the target

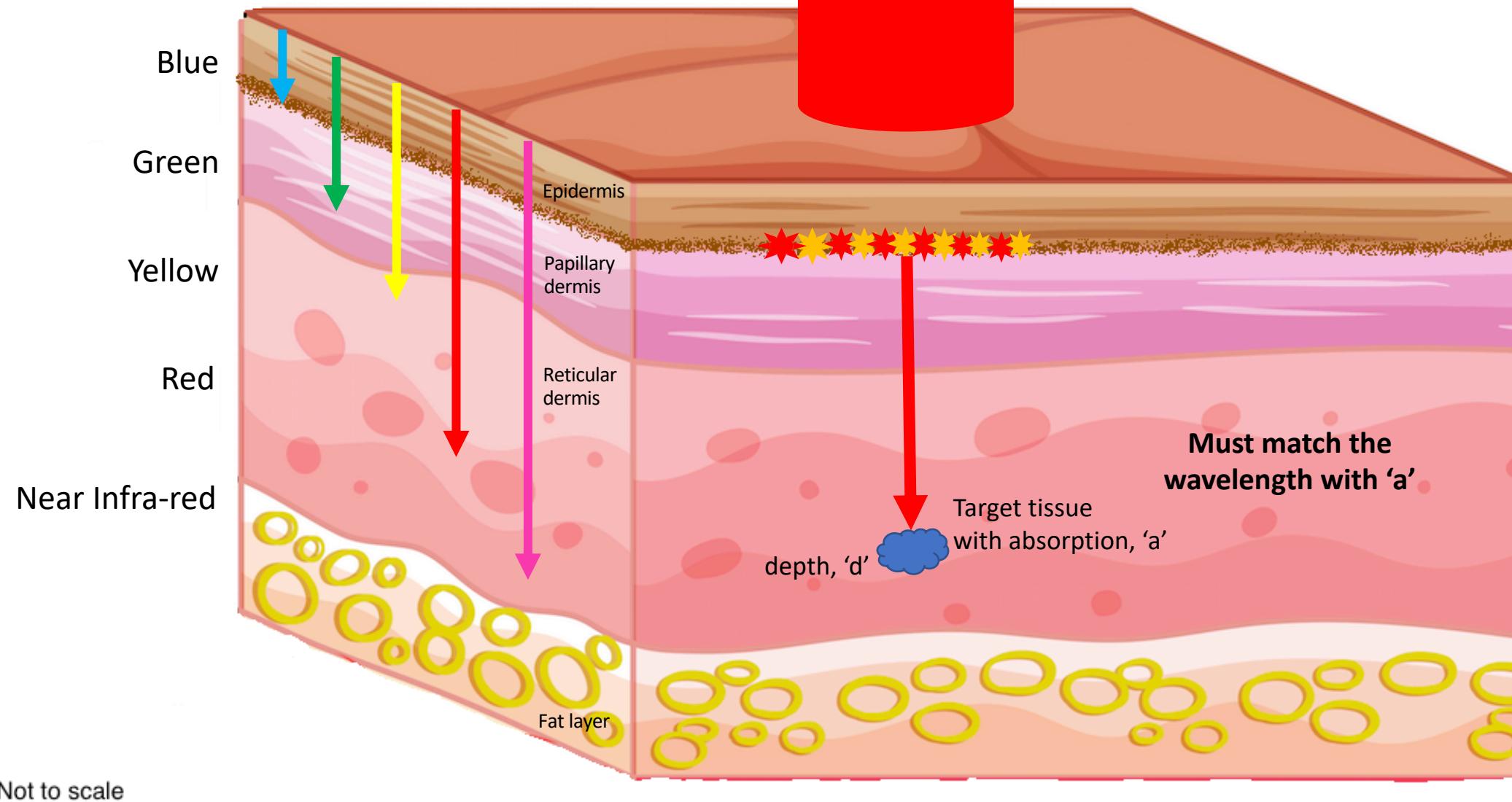


Fluence (= energy / spot size area)



## Light energy absorption in the target

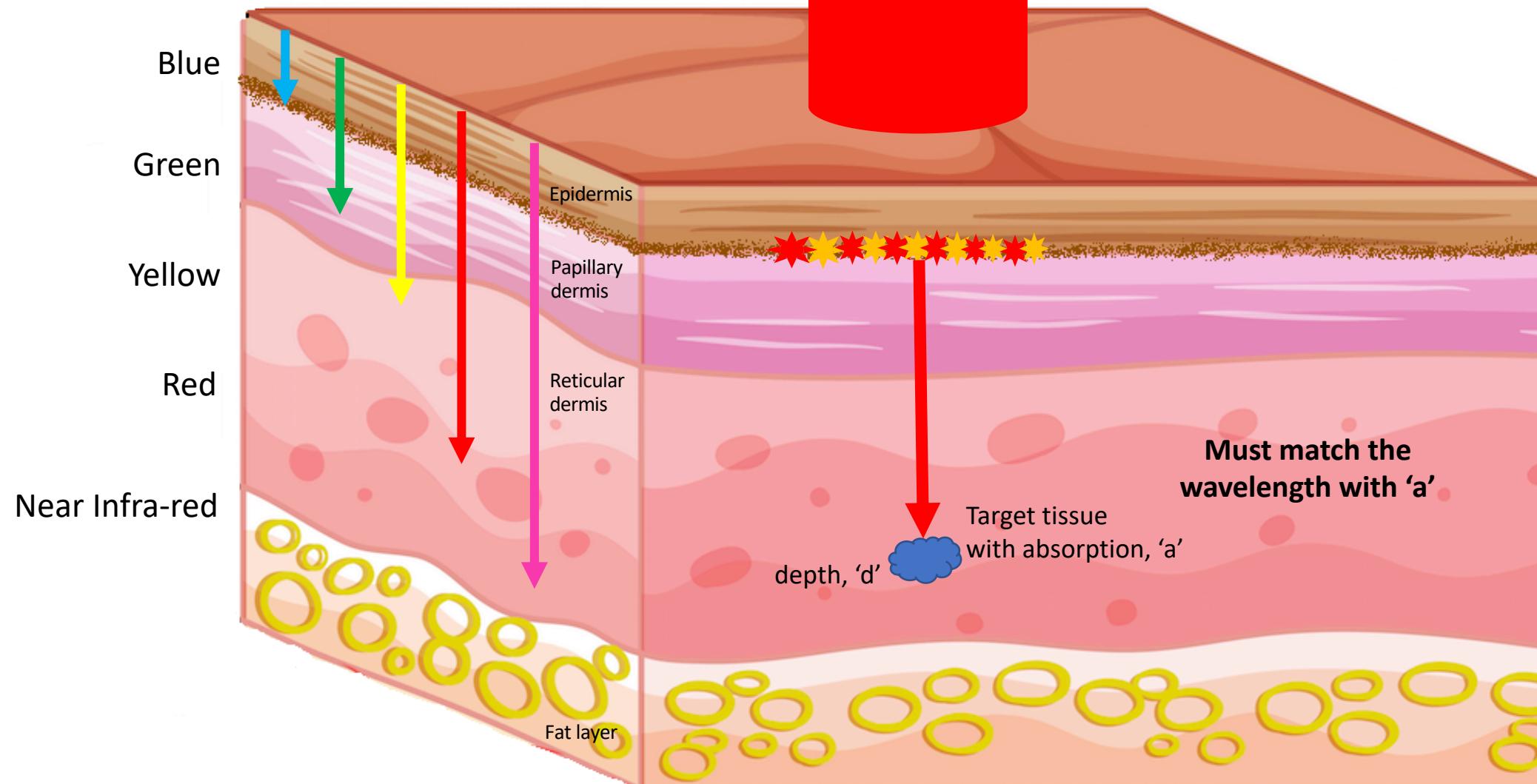
Fluence (= energy / spot size area)



## Light energy absorption in the target



Fluence (= energy / spot size area)

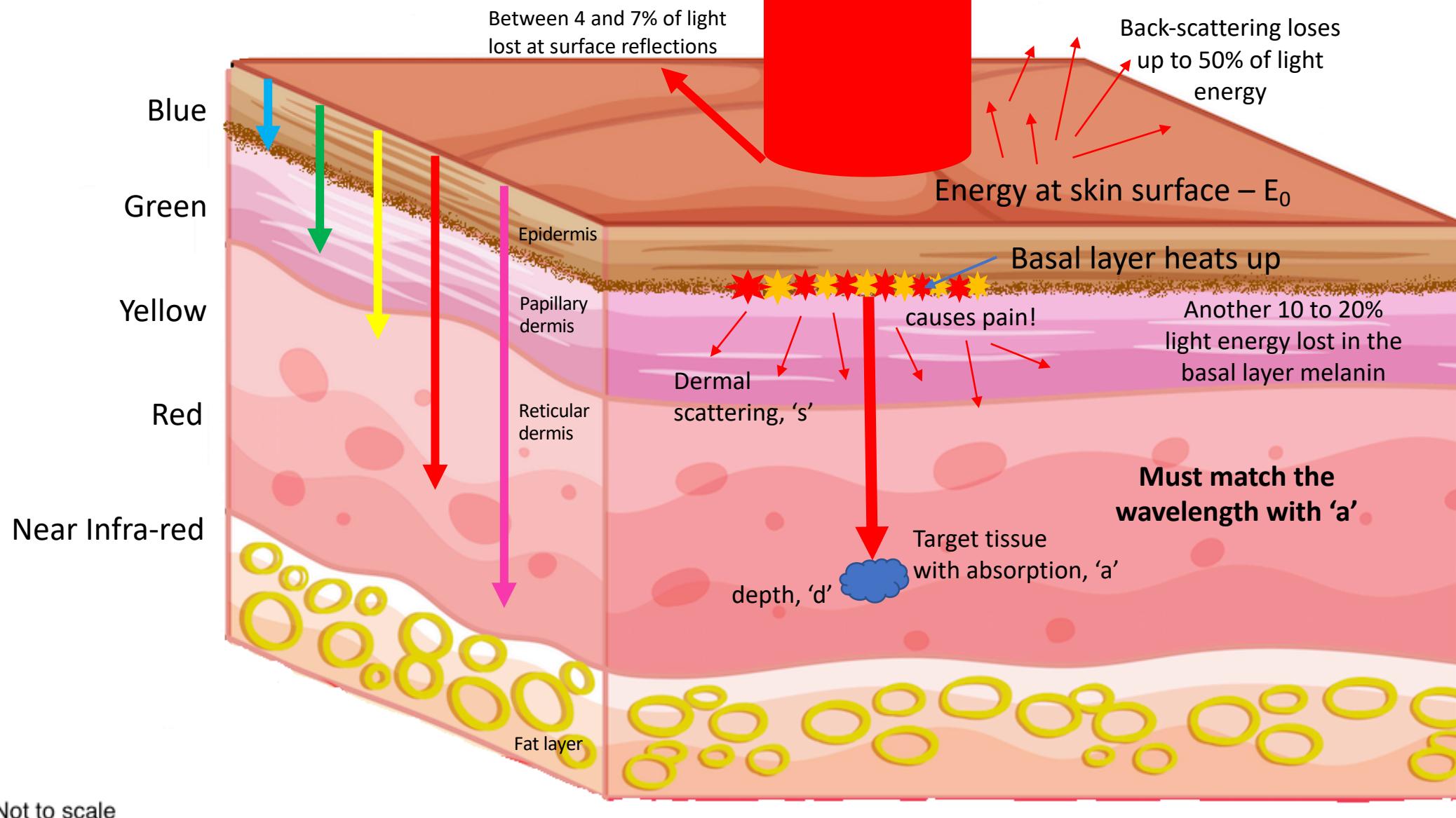


Useful penetration depth:  
wavelength  
spot diameter  
energy,  $E_0$

Energy absorbed by target:  
wavelength  
depth  
absorption, 'a'  
scattering, 's'



## Light energy absorption in the target



Fluence (= energy / spot size area)

Spot diameter

Between 4 and 7% of light lost at surface reflections

Blue

Green

Yellow

Red

Near Infra-red

Epidermis

Papillary dermis

Reticular dermis

Fat layer

Energy at skin surface –  $E_0$

Basal layer heats up

Dermal scattering, 's'

causes pain!

Another 10 to 20% light energy lost in the basal layer melanin

Must match the wavelength with 'a'

Target tissue with absorption, 'a'

Not to scale

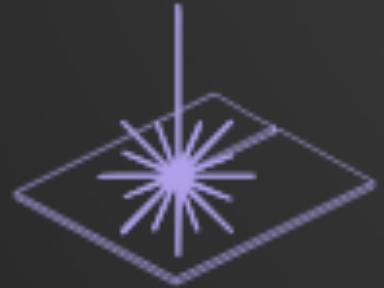
Useful penetration depth:

wavelength  
spot diameter  
energy,  $E_0$

Energy absorbed by target:

wavelength  
depth  
absorption, 'a'  
scattering, 's'





THE LASER-IPL GUYS

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