

Jenny

Re: relation between how fast you run and how wet you get when going a particular distance in the rain.

H (meters squared) = Head Area (cross section from above)

F (meters squared) = Frontal Area (cross section from front)

D (drops/meters cubed) = rain density (assume evenly dispersed)

G (meters/sec) = rain speed (assume dropping straight down)

V (meters/sec) = running speed

S (meters) = distance of journey in the rain

T (sec) = time spent running

Rain on head = TGDH, T = S/V  
= SGD H/V

Rain on front = SFD (independent of V!!!)

Total rain = rain on front + rain on head = SGD H/V + SFD = SD(GH/V + F)

Therefore, the faster you run, the less rain drops on your head, but the same amount hits your front whether you ran fast or slow. Therefore, in total, the faster you go the less wet you get, but no matter how fast you go, you will still get hit with SFD drops of rain.