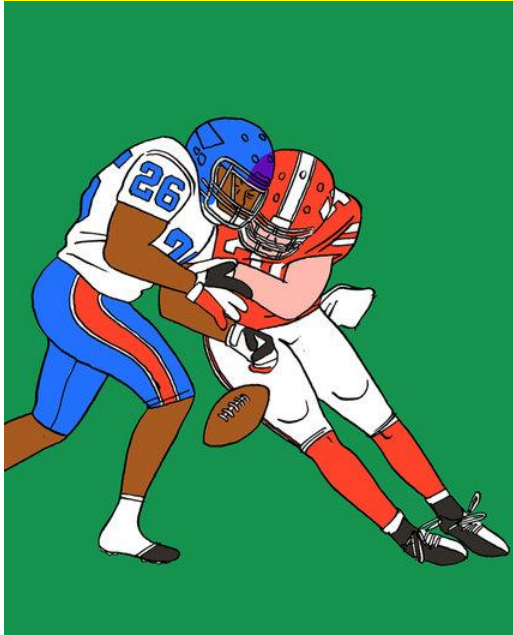


NEWTON'S 2ND LAW

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Football, So Beautiful for Fans, Scars Players With Dementia



INTRODUCTION: C.T.E of pro football players seems to be due to Collisions they have in football games. See article below. In the example collision at left consider the 192 pound quarterback (carrying the ball at 20 mph) stopping in 6 inches. Also, consider his body surface area involved in the stopping to be 1 ft.² (144 inch²).

QUESTIONS: (a) Convert 20 mph to ft./s.? (b) Find mass of football player? In units of slugs. (c) Find deceleration in ft./s.²? (d) Find force the football player experienced in stopping? (e) Find the pressure in lb./inch² the stopping football player experiences?

HINTS: 60 mph = 88 ft./s. , weight = m g , g = 32 ft./s.² , $v^2 = v_0^2 + 2 a x$
 $F_{NET} = m a$, pressure = $P = F/A$,

ANSWERS: (a) 29.33 ft./s.² , (b) 6 slugs , (c) - 860.44 ft./s.² ,
(d) ~ - 5,162.6 lb. , (e) ~ 35.85 lb./inch²

This Sunday evening marks the 50th playing of the [Super Bowl](#), which began as a far simpler interleague rivalry and evolved into a national feast day for football fans to binge on the **balletic action** before giant television screens and worship the game across nacho bowls. And then there is [Willie Wood](#), a star of the very first Super Bowl, a canny defensive player who intercepted a crucial pass for the Green Bay Packers in that game, but now, 49 years later, remembers nothing of that play or of ever being there. Wood resides in an assisted living center, suffering from dementia, among other handicaps. Doctors and his family can only wonder whether Wood, as he himself suspected, is suffering from **the disease that increasingly haunts football — chronic traumatic encephalopathy, or C.T.E.**, which has symptoms like dementia, **memory loss and depression**. It is **(((attributed to repeated blows to the head)))** and can be diagnosed only posthumously. **With each of the headbanging concussions that the players call “bell ringers,” the evidence mounts that football has a C.T.E. problem that is steadily undermining the joy of the game.** It has reached the point where more and more retired players troubled with dementia symptoms are directing that their brains be dissected after death. The **resulting data show that playing professional football is an undeniably risky career**, with well over 100 former players having been found with the brain scars that confirm C.T.E.