

Striking Down another Testosterone Myth: 1 Week vs. 2 Week Treatments The 1/2 Life Science of Depo-Testosterone

At C4MH we constantly hear about someone who knows someone that gets injections every week and that this is a better treatment regimen because the “half life” of Depo- testosterone (cypionate) is 8 days. Or our favorite “*I read it on the internet*”.

The problem is the vast majority of people have a limited scientific knowledge of what this truly means when it comes to drug in plasma half life and pharmacokinetics.

Now rather than explain this 1/2 life decay formula:

$$N(t) = N_0 \left(\frac{1}{2}\right)^{t/t_{1/2}} = N_0 2^{-t/t_{1/2}} = N_0 e^{-t \ln(2)/t_{1/2}}$$

$$\log_2(N_0/N(t)) = t / (\log_2(N_0) - \log_2(N(t))) = (\log_2(N_0/N(t)))^{-1} = t \ln(2) / \ln(N_0/N(t))$$

$$N(0) = N_0$$

$$N(t_{1/2}) = \left(\frac{1}{2}\right) N_0$$

$$\lim_{t \rightarrow \infty} N(t) = 0$$

To simplify it all:

The half life is the point at which the drug in plasma is reduced by 50%.

The half life of Depo-Testosterone is 8 days.

Now “simple” logic would lead one to believe that at twice the 1/2 life (16 days) there would be ZERO (0%) of the injected testosterone in your plasma but that is NOT THE CASE as half life science is not that simple.....as that mathematical formula above indicates.

The half life formula for Depo-Testosterone in plasma states that at 8 days you would have 50% of the initial dose remaining, at 16 days you would have 25% of the initial dose, at 24 days it would be 12.5%, at 32 days 6.25% and so on.

The 14 day protocol 200mg treatment (standard C4MH dose): **at 8 days = 100mg's remaining**, 16 days = 50 mg's, 24 days = 25 mg's. **At 14 days you would still have 62.5mg's of active Depo –Testosterone in plasma.**

The 7 day protocol 100mg treatment (standard dose): **at 7 day = 57 mg's** remaining of active Depo-Testosterone in plasma.

So at 200mg/14 days (C4MH protocol) **you have an active 100mg's in plasma at 8 days** and at the 100mg / 7day protocol you have an active 57mg's at 7 days.

Clearly the 7 day protocol makes ZERO medical sense.....and any perceived difference is truly placebo.

Pfizer Pharmaceutical (manufacturer of Depo- Testosterone) and the FDA indicate a 14 day treatment protocol with the dose amount being the only variable. This is the prevailing standard of care (for a reason) and the standard C4MH operates under.