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7 days of [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine). Reports of quinine for ‘febrile illness’ date back to 17th C Peru; one legend is that water contaminated by cinchona tree bark was drunk & fever abated. This led to local villagers drying bark, grinding to powder & drinking to cure fever. In the early 19thC quinine was purified from the cinchona tree bark & used to treat malaria. Synthetic forms chloroquine & [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) followed in the 20thC. WW2 soldiers used chloroquine to prevent malaria & it was observed to help inflammatory arthritis.

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Day 2: In the 1950s, chloroquine was modified to [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) (HCQ) to reduce toxicity; Neither is routinely used for severe forms malaria as there is high resistance. HCQ is licensed for UK adults RA, SLE, systemic discoid lupus erythematosus & photosensitive skin conditions. Licensed children as above, but Plaquenil unlicensed for dermatological conditions.

Day 2(cont)Adult dose typically 200 or 400mg/day (max 6.5 mg/kg ideal BW) child dose 5-6.5mg/kg IBW max per dose 400mg. [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) is a DMARD and can take 3 or more months to work. It can be used alone or in combination other DMARDs e.g in methotrexate rheumatoid arthritis (RA) treatment. Can be used 1st line palindromic RA & for mild SLE

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Day 3:MOA [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) unknown; intra-cellular accumulation of the drug increases lysosome pH. In malaria, this impairs parasite replication. In human cells, this impairs immunity e.g antigen processing/reduces abnormal autoimmune responses & lowers some enzyme levels: proteases, hydrolases, lowers prostaglandin production, lowers neutrophil chemotaxis, reduces IL-1

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Day 4: kinetics [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) racemic R+S mixture; high oral absorption & high volume of distribution. CYP3A4 breakdown + 1 active metabolite. Mostly renal excretion, but 25% faeces & 5% skin! Oral drug half-life is 22 days, i.v t ½ 40 days; known for prolonged drug retention in multiple tissues e.g eyes, lungs

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Day 5: [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) adverse drug reactions: common include visual disturbance, rash, abdominal pain, headache, psychiatric lability. Uncommon darkening skin/bleaching hair. Serious include retinopathy, convulsion, SJS & DRESS, cardiotoxicity e.g QT prolongation, blood disorders. High toxicity in overdose. Annual eye check recommended

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Day 6: Minimal drug-drug interactions with [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine). Severe DDI with penicillamine and laronidase; Aluminium + Ca & Mg carbonate decrease absorption (leave 4 hrs between taking). SPC (not BNF) states digoxin levels can increase & there may be a reduced anti-epileptic effect (not exhaustive)

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Day 7; Certain properties of [#hydroxychloroquine](https://twitter.com/search?q=%23hydroxychloroquine) make it a candidate as an anti-viral agent, hence currently mooted for the treatment & prevention of [#COVID19](https://twitter.com/search?q=%23COVID19). The increase in cellular lysosome/endosome pH could impair viral entry; this has been demonstrated in vitro (monkey kidney cells). Other theoretically helpful characteristics re [#COVID](https://twitter.com/search?q=%23COVID)-19 include high levels of drug retention in lung tissue & attenuation of the cytokine storm. Clinical evidence is lacking; clinical trials are ongoing; results thus far have not supported use

CPD: in addition to the tweets, read the BNF sections on ‘Rheumatic disease suppressing drugs’ (anti-malarials) and the monograph Hydroxychloroquine sulfate. Another useful source is the Summary of Product Characteristics for Hydroxychloroquine sulfate

<https://www.medicines.org.uk/emc/product/11326/smpc>

CPD questions (most, but not all answers will be in the Tweets). There is only one correct answer per question

1. The main use for hydroxychloroquine in the UK is as an anti-malarial drug

TRUE or FALSE

1. Hydroxychloroquine can be used to manage paediatric inflammatory conditions such as juvenile idiopathic arthritis

TRUE or FALSE

1. Which is TRUE?
2. Dosing is always 400mg/day for adults
3. Quinine is still useful to treat most forms of malaria
4. Hydroxychloroquine has a high volume of distribution
5. Hydroxychloroquine has poor oral absorption
6. Hydroxychloroquine use demands a lot of laboratory-based monitoring

TRUE or FALSE

1. Which of the following is a common adverse drug reaction for hydroxychloroquine?
2. Headache
3. Convulsion
4. Hair bleaching
5. Blood disorders
6. Which of the following is FALSE?
7. An annual eye assessment is recommended when taking HCQ
8. The long half-life of HCQ encourages accumulation of the drug in tissues such as the eye
9. Some HCQ excretion is through the skin
10. Used as a DMARD, HCQ starts to work quickly i.e days to weeks
11. Some essential minerals can decrease oral absorption of HCQ

TRUE or FALSE

1. The long half-life and distribution characteristics of HCQ mean that lung accumulation of the drug is a theoretical advantage for COVID-19 lung infection

TRUE or FALSE

1. Which of the following is TRUE?
2. HCQ has some immune-suppressive effects
3. All potential drug-drug interactions for HCQ are in the BNF
4. The risk of bone marrow suppression is high when taking HCQ
5. HCQ has a short half life
6. Diabetes is a caution for hydroxychloroquine use

TRUE or FALSE