

## HOW MUCH CPAP IS ENOUGH?

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Clinicians running CPAP clinics are often asked by patients “how many hours of CPAP should I be using?” This is a very sensible question because, on the one hand it is important to get as much benefit as possible, but on the other there is no point trying to use a treatment more than is necessary. However, a secondary question needs to be answered first, “for what purpose is the CPAP being used?”

In the UK, the vast majority of clinicians prescribe CPAP to alleviate excessive daytime sleepiness. This is because the evidence for CPAP benefitting any other problem, such as the likelihood of having a stroke or heart attack, is extremely poor; what evidence there is suggests very little, if any, benefit. Compared with other stroke and heart attack prevention strategies, such as blood pressure medications and statins, CPAP pales into insignificance. The most robust data on this comes from the recently reported large SAVE trial <sup>(1)</sup> which showed in patients with OSA, who already had cardiovascular problems for which they received conventional treatment, there was no benefit at all from also being treated with CPAP. However, in many there was a clear improvement in sleepiness, as one would expect. From other countries, where some aspects of physician reimbursement depend on prescribing CPAP, we do hear stories of patients being told that they will have a stroke or heart attack if they do not use their CPAP, a completely unjustifiable threat!

So, back to the original question, “how much CPAP is enough CPAP?” The answer, in my view, is the amount required to reduce symptoms to the required level, and this will be different between individuals. There is a myth out there that more than four hours, for more than 70% of nights, is the magic number (which equates to just under three hours per night on average). Using such a fixed threshold is of course nonsense, some will need more, and others may get away with less. If someone has OSA all night, whenever off CPAP, then they will probably need six or more hours per night to ensure enough good sleep; however, some patients with OSA do not get an immediate return of their OSA when they stop using CPAP <sup>(2)</sup>, and can thus get away with much more intermittent use. This nonsense threshold, used by some to define adequate use of CPAP, partly comes from a study some years ago which showed, ON AVERAGE, an increasing benefit from increasing CPAP use <sup>(3)</sup>. However, it is rarely pointed out that 1) there was no threshold, it was a simple straight line relationship, and 2) the variation around that general relationship was enormous, with some not getting symptom resolution on six hours per night, and some getting full resolution on two hours a night. The other powerful reason for the appearance of an arbitrary threshold is that in many countries CPAP is rented from a health care company (rather than bought outright), who get paid a fixed amount per month for as long as the patient is on CPAP. The health care insurers, or purchasers, do not want to pay for a CPAP machine that is sitting in a cupboard, so had to choose some threshold for usage, below which they felt they could refuse to reimburse the CPAP costs!

So the answer to the question is very much that a person needs the amount of CPAP that adequately resolves their symptoms. Furthermore, this may vary to some extent, week-to-week and month-to-month, or indeed depending on how alert someone needs to be the next day; and thus the patient can titrate their CPAP usage as required. CPAP clinics should be helping patients manage their symptoms (which *may* involve helping them to increase CPAP usage), rather than using spurious reasons to berate them for not using their CPAP more than they want to, or need!

1) *McEvoy et al. NEJM 2016;374:919* 2) *Rossi et al. EurResp J 2014;43:1387* 3) *Weaver et al. Sleep 2007;30:711*

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