to deliver them. However, given this is a largely untapped use of ultrasound curriculum. This seems imperative to me given that oedema, pneumonia, asthma/COPD and pulmonary embolism, 5 for respiratory failure. There is increasing evidence for the utility of lung ultrasound in the diagnosis of acute respiratory failure: the BLUE protocol. Chest 2008;134:117–25.

Sleep in adolescents and young adults

Editor – I congratulate the authors of the recent article about sleep in adolescents and young adults (AYAs). 1 Like the authors, I am aware of the association between poor sleep hygiene and the development of mental health and chronic pain disorders. As a consultant physician working in the UK with an interest in AYA care, I observe the consequences of poor sleep in this group of patients on an almost daily basis. I have an interest in ‘smartphone overuse syndrome’ (SOS) in AYAs and, in particular, smartphone use at night and the negative effects it may have on sleep. The UK Ofcom communications report published in 2016 highlighted that, on average, we now spend more time on electronic media and communications than we do sleeping. 2 Two-thirds of 16–19-year-olds wake in the middle of the night to check their phones. 3 A number of theories have been proposed about how smartphone use in the evening and at bedtime can affect our sleep. 4

> Sleep could simply be displaced by smartphone use at night leaving less time for sleep, sometimes referred to as ‘sleep stealing’.
> Smartphone use at bedtime could lead to increased mental, emotional or physiological arousal and therefore interfere with time to onset of sleep.
> Light emission from smartphones that use back-light or ‘blue-range’ light technology has been demonstrated to interfere with melatonin secretion and our circadian physiology.
> Incoming messages, emails, status updates or calls can disturb sleep and are associated with a reduction in the quantity and quality of sleep or ‘restorative’ sleep.

The comorbidity of depression with sleep problems is common and well documented. 1 A recent meta-analysis reviewing the relationship between sleep and depression in adolescents suggested that sleep disturbance plays a key role in the aetiology of depression during adolescence. 5 A study published in 2012 found a significant association between nocturnal mobile phone use and poor mental health, suicidal feelings and self-harm after controlling for other confounding variables (including sleep length) in 17,920 adolescents. 6

Despite evidence demonstrating an increase in the use of electronic media and smartphones in AYAs, as well as evidence linking this increased use to sleep and mood disturbances, studies looking at smartphone use, sleep disturbance and chronic depression.

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