Body Focused Repetitive Behaviors
- Trichotillomania (hair pulling), excoriation disorder (skin picking), onychophagia (nail biting), and onychotillomania (nail picking) are body focused repetitive behaviors (BFRBs) causing damage to skin, hair, and nails, often with clinically significant psychosocial consequences.
- BFRBs are associated with neuropsychiatric comorbidities.
- There are currently no standardized treatment for BFRBs.
- Psychotropic drugs (SSRIs, anticonvulsants, tricyclic antidepressants) have been studied with variable efficacy.
- Pathophysiology is incompletely understood, though hyperactivity due to increased glutaminergic excitation or reduced GABAergic inhibition has been hypothesized.

N-Acetylcysteine (NAC)
- N-acetylcysteine (NAC) is a glutamate modulator and antioxidant that has shown promise in reducing compulsive behaviors in BFRB.
- NAC is inexpensive and available as an over-the-counter supplement.
- NAC has a benign side effect profile.

Results

Figure 1. NAC treatment studies for trichotillomania

Figure 2. NAC treatment studies for excoriation disorder

Figure 3. NAC treatment studies for onychophagia

Discussion
- Numerous studies have assessed the efficacy of NAC for BFRBs.
- Effective dose of NAC is uncertain as many studies used varying dosages, especially in pediatric v. adult populations.
- Some studies may have used subtherapeutic dosages, which may have affected results.
- It remains unclear if higher doses correlate with greater efficacy.
- Medication adherence was not emphasized in most studies.
- NAC has limited bioavailability which may be a limitation for efficacy.
- There is evidence that esterification of the carboxyl group in NAC to produce N-acetylcysteine ethyl ester (NACET) increases lipophilicity with improved pharmacokinetics.

Conclusions
- NAC may be a promising treatment for BFRBs with high efficacy, low side effect profile, and affordability.
- Evidence is limited, with only 2 clinical trials for trichotillomania, one clinical trial for excoriation disorder, one trial for onychophagia, and none for onychotillomania.
- Long-term clinical trials with larger sample sizes for adult and pediatric populations are needed.

References