1 week after starting the medication. Sleep outcomes will be measured by polysomnography, daily sleep diary, and the Insomnia Severity Index. RESULTS/ANTICIPATED RESULTS: We hypothesize that (1) within the placebo group data both subjectively and objectively measured outcomes will similarly show improvement in insomnia symptoms, (2) the increase of the placebo medication dose will result in an increased benefit, (3) the trauma-related insomnia placebo group will have the same type and similar rate of side effects reported in previous suvorexant trials. DISCUSSION/SIGNIFICANCE OF IMPACT: Most previous studies examining placebo effects focused on pain and depression. Information obtained from this project will complement our current understanding of placebo effects by characterizing placebo effects on trauma-related insomnia. This study will inform the development of novel strategies to maximize utility of placebos in future clinical trials.

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Feasibility of maternal holding during therapeutic hypothermia for infants with encephalopathy

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OBJECTIVES/SPECIFIC AIMS: Therapeutic hypothermia (TH) is a neuroprotective therapy regularly used in newborn infants following traumatic births. The infant's temperature is maintained at 33.5°C for 72 hours by a cooling blanket upon which the infant is placed. Parents are not permitted to hold their infant while TH is ongoing due to concerns for unintentional rewarming or accidental dislodging of catheters or other monitoring equipment. Our prior qualitative research with nurse and parent interviews described the inability to hold an infant during TH as a significant source of stress. We assessed the feasibility of a 30-minute period of maternal holding for infants being actively treated with TH and assessed both the maternal experience of holding and the nurse experience of supporting holding. METHODS/STUDY POPULATION: This was a feasibility study employing a mixed-methods approach. Inclusion criteria were gestational age at birth of 35 weeks or greater, absence of clinical or electrographic seizures during the first 24 hours of TH, and designation as "clinically stable" by the attending neonatologist with the infant on room air, nasal cannula, or continuous positive airway pressure. Quantitative data were obtained from vital sign monitoring every 2 minutes before, during and after holding and from maternal and nurse research surveys. Qualitative data were obtained from nurse surveys. Infant rewarming was prevented through use of a thin foam insulating barrier placed between mother and infant during holding. Adverse events were defined as a change in infant temperature greater than 0.5°C above or below 33.5°C, accidental dislodging of central lines/disruption of EEG leads or early termination of holding due vital sign instability present for greater than 2 recorded measurements including infant bradycardia defined as heart rate less than 80 beats per minute, hypotension defined as mean arterial pressure less than 40 mmHg or oxygen saturation of less than 93%. RESULTS/ANTICIPATED RESULTS: There were 10 newborn infants undergoing TH for neonatal encephalopathy (median gestational age 39.4 weeks) and their mothers (median age = 31 years) were recruited. Infants remained on the hypothermia blanket during holding and were transferred safely to their mother's arms without medical equipment malfunction/dislodgement. Holding occurred at a median of 47 hours of life. The mean temperature prior to holding was 33.4°C and at completion of holding the mean temperature was 33.5°C ($p = 0.18$). There were no significant bradycardia, hypotension or oxygen desaturation events. In total, 80% of mothers reported difficulty bonding with their baby prior to holding and 90% reported a high level of stress before holding. After holding, all mothers felt their bond was "stronger" or "much stronger" and all felt "less stressed" or "much less stressed." After holding, 75% of nurses reported that they felt a more positive emotional response to the infant. One nurse stated, "being a part of this emotional experience made me feel closer and more connected to this family and gave me a different perspective on just what they had been dealing with and feeling since giving birth to their child." In free text responses, on 5 separate occasions, nurses commented on the relaxed, calmed or less irritable appearance of the infant while being held during TH. DISCUSSION/SIGNIFICANCE OF IMPACT: In this sample of term infants treated with TH, a 30-minute period of maternal holding was not associated with increased temperature or other adverse events. Holding during TH was associated with extremely positive feedback from mothers and nurses. Future larger studies could consider assessing the impact of holding on endocrinological markers of stress and bonding, on infant glycemic control, on breastfeeding success rates, and the impact of earlier and improved bonding on the developmental outcomes of children held during their treatment with TH. Increasing the duration of holding and allowing both parents to hold on more than one occasion during the 72 hours of TH may increase the proposed benefits of this intervention.

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Influence of alcohol use disorder and comorbid psychopathology on discounting of delayed rewards

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OBJECTIVES/SPECIFIC AIMS: Alcohol use disorder (AUD) has been associated with greater discounting of delayed rewards relative to healthy controls. The relationship, however, has been inconsistent, likely because previous studies had relatively small sample sizes and inadequately controlled for comorbid psychopathology and substance use. In the present study, we analyzed one of the largest clinical research samples to date to assess the influence of alcohol use on delay discounting, and examine the influence of confounding variables including substance use disorder. METHODS/STUDY POPULATION: In total, 801 participants completed a delay discounting task where they chose between smaller, immediately available monetary amounts ($0–$90) and $100 available after a delay of 7–30 days. Delay discounting behavior was summarized as the natural log of k, a constant derived from a hyperbolic discounting equation. Participants also completed Structured Clinical Interviews for DSM-IV disorders, 90-day Timeline Followback interviews, and the Fagerström Test for Nicotine Dependence. Participants were divided into 4 groups: healthy controls (n = 298), past AUD (n = 69), and current AUD with (n = 224) and without (n = 210) comorbid psychopathology or substance use disorder. Kruskal-Wallis test was used to examine the effect of group on delay discounting. RESULTS/ANTICIPATED RESULTS: There were significant differences in the distribution of delay discounting scores by group ($H = 80.195$, $p < 0.001$). Healthy controls and past AUD showed lower levels of delay discounting than current AUD and current AUD + comorbidity groups with medium effect sizes (Cohen's $d = -0.635$ and Cohen's $d = -0.614$, respectively). There were nearly no differences between current AUD with and without comorbid psychopathology groups (Cohen's $d = -0.024$). The past AUD group showed almost no difference relative to the healthy control group (Cohen's $d = 0.007$). DISCUSSION/SIGNIFICANCE OF IMPACT: Individuals with current AUD were shown to discount rewards greater than those without current AUD, although comorbid psychopathology did not significantly affect discounting. Surprisingly, individuals with past AUD were more similar to controls than to those with current AUD. Our findings suggest that current problematic alcohol use is related to greater discounting of delayed rewards, but comorbid diagnoses do not significantly impact this relationship. However, once problematic patterns of alcohol use cease, delay discounting appears to return to levels comparable to healthy controls.

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Long-term response to treatment and disease recurrence in a prospective cohort of morphea patients

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OBJECTIVES/SPECIFIC AIMS: Morphea (localized scleroderma) is an autoimmune disease characterized that is widely thought to have a monophasic course, in which an initial period of inflammation (activity) ultimately results in scarring, atrophy, and functional impairment (damage). Understanding the long-term clinical course of morphea is important for the planning of future interventional studies, and as a tool for clinicians in determining risk for poor disease outcomes. METHODS/STUDY POPULATION: We conducted a prospective cohort study of 130 participants enrolled in the Morphea in Children and Adults Cohort over a median follow-up time of 4.3 years, to determine the rates of response to treatment and disease recurrence as measured by the Localized Scleroderma Cutaneous Assessment Tool (LoSCAT). To determine risk factors for recurrence of disease activity, survival analysis using the log-rank test was used to compare subgroups by morphea type, therapy, and age at disease onset. RESULTS/ANTICIPATED RESULTS: Within a 1-year follow-up period, 66% of patients treated with methotrexate and 46% of patients with UVA1 phototherapy had achieved complete response to treatment. In patients who had achieved response to treatment, 29% experienced disease

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