expression of ARs in the nasal tissue, trachea, and lungs. The nasal tissue exhibited the lowest baseline expression of ARs as compared to the lung and trachea which was further downregulated following adenosine treatment. Additionally, accumulation of endogenous adenosine in ADA-/- mice showed no signs of inflammation within the nasal tissue. Together, we demonstrated that topical adenosine effectively decreased inflammation and mucus production in a mouse model of viral ARS. DISCUSSION/SIGNIFICANCE: Previously, we found that topical adenosine dramatically enhances mucociliary clearance in the nose and sinuses. In this study, we found that nasal topical adenosine effectively decreased inflammation and mucus production in viral ARS. Our data suggest that nasal topical adenosine is an effective topical therapeutic option for viral ARS.

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Use of Implementation Science to Identify Implementation Determinants of Chronic Obstructive Pulmonary Disease Practice Guidelines

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OBJECTIVES/GOALS: COPD is a progressive airways disease that results in death or disability. There is poor uptake of clinical guidelines (CPG) to manage COPD and studies to bridge this implementation gap have shown inconsistent results. Using implementation science principles we aim to understand COPD-CPG implementation determinants from providers'perspective. METHODS/STUDY POPULATION: The study is being conducted in ten VA Primary Care Clinics. Guided by the Consolidated Framework for Implementation Research (CFIR), a conceptual framework developed to guide systematic assessment of multilevel implementation contexts, we are using semi-structured guides to conduct key informant qualitative interviews (physicians, physician extenders and nurses), to support a formative evaluation. CFIR domains relevant to the study were determined by a multidisciplinary team. Informants are identified through online outreach and voluntary participation. Sampling adequacy will be assessed by achievement of code saturation. A qualitative template analysis will be used to summarize the barriers and facilitators of each component of COPD-CPG organized by CFIR-domain. RESULTS/ANTICIPATED RESULTS: We anticipate a list of modifiable and non-modifiable contextual, recipient (provider and patient), and COPD CPG content (innovation) barriers to implementation. Many settings do not have critical elements of these CPG, such as a standardized inhaler education/assessment pathway, patient education material, or pulmonary rehabilitation referral pathway. Existing literature indicate reasons behind the insufficient uptake of COPD CPG include low familiarity with guidelines, perception of minimal value of guidelines by physicians, and time constraints; we will present contextual, recipient and innovation determinants specific to our setting. DISCUSSION/SIGNIFICANCE: This comprehensive assessment of barriers and facilitators to COPD-CPG will inform tool development and implementation strategies identification to improve COPD CPG uptake. COPD is the most common veteran lung disease. Improvement in COPD care has enormous potential for benefit for local veterans, as well as potential for wider dissemination.

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A Study of Cortical Thickness in Bilingual Children with Reading Disability (Dyslexia)*

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OBJECTIVES/GOALS: Dyslexia is a common Reading Disability (RD) affecting 7-12% of the population and is associated with less cortical thickness (CT) in bilateral brain regions. However, the interaction between RD and a bilingual experience on CT is unknown, even though bilingualism is also associated with altered CT. METHODS/STUDY POPULATION: We studied 48 Bilinguals assigned to the Typical Reader group based on Oral Reading Recognition Test (ORRT) scores above 90 (avg=107 ± 14), 47 Bilinguals assigned to the RD group based on ORRT scores below 85 (avg=77 ± 5), 45 English Monolingual Typical Readers with ORRT scores above 90 (avg=102 ± 13) and 47 Monolinguals with RD based on ORRT scores below 85 (avg=78 ± 5). Participants (all from the Adolescent Brain & Cognitive Development Study) were 11.9 ± 0.7 years of age and the 4 groups were matched for sex, self-ratings of English, nonverbal reasoning, and combined household income. Structural magnetic resonance images were analyzed using CAT12 and all four groups were entered into a factorial analysis. RESULTS/ANTICIPATED RESULTS: Surprisingly, the main effect of Reading Ability did not reveal any regions where RD manifested less CT than Controls (raising the possibility that the findings from the only two prior reports were due to small samples). The main effect of Language Background revealed less CT in bilinguals in bilateral perisylvian regions (inferior frontal gyri, superior temporal gyri, and left Heschl's gyrus) consistent with prior reports. There was no interaction of Reading Ability by Language Background. Taken together, we found no differences in CT in those with RD relative to Typical readers and no evidence that the dual language experience affected this result in any way. DISCUSSION/SIGNIFICANCE: The lack of interaction between Reading Ability and Language Background indicates that a dual-language experience does not affect CT differently in those with RD and reduces concerns that RD in those who are bilingual needs to be given separate consideration in studies of CT neuroanatomy.

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AMG487, A CXCR3 Antagonist, changes the Inflammatory Milieu in Familial Hemophagocytic Lymphohistiocytosis (FHL) Hepatitis

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OBJECTIVES/GOALS: Familial Hemophagocytic Lymphohistiocytosis (FHL) is a systemic inflammatory disease, causing acute liver failure (ALF). Elevated Interferon gamma (IFN-γ) results in increased hepatic transcription of the chemokines CXCL9 and

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