Ann Behrman on Noise

Short form:

Health effects from noise:

F 35s are 50-250% louder than our current F 16's. The number of takeoff/landings would increase by 28% (and even > 40% during the 2 year training of pilots on F 35). Basing the F 35's in Madison compared to the other 4 sites, would impact the most homes with an additional 2215 residents affected by sound and 132 households with 292 people in areas in the Truax flight paths potentially needing relocation for unhealthy dBA in excess of 70-75.

Health effects include hearing loss for exposure > 70-80 dB, increase in blood pressure, heart rate and stress hormones that could increase risks of heart attacks, stroke and exacerbate symptoms of anxiety and post traumatic stress (PTSD). In fetuses, infants and children exposure to excess noise can increase the risk of preterm or low birth weights, delay speech development and cognition as well as have negative effects on attention, concentration, long term memory and reading and math comprehension. Also particularly would be children with Autism, ADHD or sensory processing issues and differently abled persons and the elderly who cannot easily move away from excessive noise.

Longer form:

Health effects of Noise from the F-35 fighter jets

Just how loud are these F 35 jets? The EIS reports on decibels as an average daily exposure. The EIS says we can tolerate 65 dB average daily noise, but less at night (45 dB). [The ideal from the Noise Control Act of 1972 and the Quiet Communities Act of 1978 would be 55 dB outdoors and 45 dB indoors]. We know from the EIS that there will be around 6,122 take off + landings annually from these eighteen F 35jets (averaging 16.8 flights/day), mostly in daytime, but approximately 3% between 10 pm and 7 am. Flights during the 2 year training for F 35's would increase by 47%; after 2 years this number would be increased with F 35 based here by 28%.

F 35's dB have been measured up to 121 dB by the Air Force, 7-24 dB (50-250%) louder than F 16's . The EIS estimates that flying F 35's (compared to F 16's) would increase noise levels above the 65 dB noise contour levels on an additional 1320 acres surrounding Truax field, impacting 2215 more residents. Noise contours above 75 dBA are not considered habitable, and here in Madison 132 households and 292 people would be eligible for buy out--the largest number of households/people potentially displaced compared to the 4 other alternative F 35 sites.

What are the health effects of excessive noise:

- Hearing loss for prolonged excessive noise (> 70-80 dB over 8 hours)
- Increase in blood pressure, heart rate and stress hormones, particularly worrisome for people with hypertension (high blood pressure) and ischemic heart disease (heart attack or angina).
- Pregnant women—hearing loss in infants, possible low birth weight infants, preterm birth
- Newborns, infants and young children—effects on speech development, cognition
- School learning—affects concentration, long term memory and reading comprehension

Who are the most at risk/vulnerable populations:

1. Pregnant women and their fetus
2. Infants, toddlers and young children
3. Children with sensory integration issues—Autism Spectrum Disorder and ADHD
4. Adults with high blood pressure or heart disease
5. Anyone with anxiety, post traumatic stress disorder (PTSD)

6. Disabled or elderly adults who cannot easily move away from excessive noise

Addendum: (from Jed Downs DO, Occupational Health Physician)
"How noise is measured:

Noise is measured on a scale called the decibel scale, dB. Often it will be reported on the basis of the dBA scale. The decibel scale is a logarithmic scale. The difference between 20 and 30 decibels in terms of the energy carried by the sound is a tenfold difference as is the difference in energy between 60 dB and 70 dB. The change in energy carried by sound of 20 versus 70 decibels is 100,000 fold or 10 x 10 x 10 x10 x 10 x10. …The human ear detects a 10 decibel change in loudness as being roughly twice as loud even though it carries 10 times as much energy."

(see https://saveourskiesvt.org/eis-f-35-has-maximum-loudness-more-4-times-louder-maximum-loudness-f-16/)

(see https://www.animations.physics.unsw.edu.au/jw/dB.html)

Short Bibliography of 4 good articles about noise and health:

1) Viet SM, Dellarco M, Dearborn DG & Neitzel R. Assessment of noise exposure to children: considerations for the National Children's study. *Pregnancy Child Health*. 2014 October ; 1(1): . doi:10.4172/2376-127X.1000105. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4390126/pdf/nihms-660061.pdf

2) What Do We Know about Noise Sensitivity in Autism? Marina Sarris, Interactive Autism Network at Kennedy Krieger Institute **https://iancommunity.org/ssc/noise-sensitivity-autism** **Interactive Autism Network: Linking the Autism Community and Researchers**

3) **Noise: A Hazard for the Fetus and Newborn, American Academy of Pediatrics Committee on Environmental Health,** PEDIATRICS Vol. 100 No. 4 October 1997 http://socnw.org/pdf/noise%20effects%20on%20unborn.pdf

4) Noise Exposure and Public Health, Willy Passchier-Vermeer and Wim F.Passchier, EnvironHealthPerspect108(suppl1):123-131(2000)https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1637786/pdf/envhper00310-0128.pdf

5) From the current EPA on noise and children: with the great thermometer graphics

A. For parents: Noise and Its Effects on Children https://www.epa.gov/sites/production/files/2015-07/documents/ochp_noise_fs_rev1.pdf
B.
C. For elementary kids: Listen Up Play It Safe With Your Ears Play It Safe With Your Health https://www.epa.gov/sites/production/files/2015-07/documents/ochp_noise_elem_book.pdf