

## MEDICAL EVALUATION OF SPACEFLIGHT PARTICIPANTS FOR NASA'S COMMERCIAL CREW ERA

*ÉVALUATION MÉDICALE DES PARTICIPANTS AUX VOYAGES SPATIALS À L'ÈRE DU PERSONNELLE NAVIGANT COMMERCIALE DE LA NASA*

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**Introduction:** Eight privately supported spaceflight participant Soyuz flights to the ISS have been completed, and additional private suborbital, orbital, and even lunar fly-by flights are planned soon. The number of individuals that need screening medical examinations and flight certification is already expanding. With NASA's decision to support the Boeing CST-100 Starliner and the SpaceX Dragon 2 to provide their astronaut crew access to the ISS, this paradigm increases opportunity for private paying passengers to share missions with NASA astronauts. In this new era of opportunity, NASA medical operations will now oversee the initial medical certification for commercial crew spaceflight participants instead of the Russian medical team. However, other Soyuz flights may still be conducted.

**Methods:** In preparation for the commercial crew era, NASA and the International Partners have reevaluated the screening process and approved "Appendix F" that delineates the baseline testing required for medical consideration of spaceflight participants (for missions less than 30 days). Appendix F testing requirements will be presented and evaluated. UTMB currently screens candidates for suborbital, orbital, and lunar missions. This presentation focuses on the new certification requirements and the experience gained already in screening a subject whose exam was based on the Med Volume C standards and the new Appendix F testing requirements.

**Conclusion:** Based on our experiences, we predict interesting certification dilemmas since individuals from the public with the financial strength to afford these flights tend to be older when the prevalence of medical conditions and physical limitations are exaggerated compared to traditional career astronauts. A process of specialty examinations and consultation beyond that defined in Appendix F will occasionally be required. In addition, a thoughtful waiver process for disqualifying conditions in Med Volume C and subsequently developed medical standards will be needed to assure appropriate safety and access to these missions.