Zody® RESEARCH SUMMARY

HAWORTH®
ERGONOMICS SUMMARY

Over two years of persistent research and development led to the product design innovations of Zody. The following are summaries of the four white papers written to share the understanding and results of Zody's research.

Objectively Determining Comfortable Lumbar Support in Task Seating, Tycho Fredericks, Ph.D., CPE and Steven E. Butt, Ph.D. Human Performance Institute Department of Industrial and Manufacturing Engineering College of Engineering and Applied Sciences Western Michigan University Kalamazoo, Michigan

The Human Performance Institute at Western Michigan University (WMU) conducted a laboratory study to determine the location and magnitude of support a user requires for his or her lower back while sitting in a task chair. For this research study, a test chair and a method of gathering and measuring valid data were developed. The Haworth patented test chair allowed users to adjust support in the lower back region. It was then decided that subjects would participate in three separate trials occurring over a timeframe between three to five days. The amount of desired support was considered (and measured) at the point when the participant stated that no more adjustments were desired on the chair for two consecutive adjustment periods. Results show that approximately 70 percent of the participants self-selected asymmetrical lower back support. Nearly one out of four participants selected double the support on one side of the lower back versus the other side. This study may serve as motivation for designers to rethink what user's desire in low back support.

Every Back is Different: Chair Comfort, Backrests, and Back Asymmetry, Tom Albin, PE, CPE, Master Ergonomist, Auburn Engineers, Auburn, Alabama

Accommodating various sizes and shapes of humans has long been a familiar user comfort issue for chair designers. In addition to anthropometric variation between individuals, e.g., tall and small persons, it is also common to find asymmetry, or variation in size and shape of body parts, within a single individual. Emerging research suggests this asymmetry may be an important new dimension in the design of low back support for chairs. A recent study to quantify the amount of support users wanted in the lower back found that approximately 70 percent of seated individuals were more comfortable when allowed to self-select asymmetric low back support — more support to the left side of the back or vice versa. Thus, it now appears that designers of lumbar supports for chairs may need to consider asymmetry in order to maximize comfort while sitting.

The Research Behind Zody, Teresa A. Bellingar, Ph.D., AEP, Senior Corporate Ergonomist; Pete Beyer, Development Engineer; and Larry Wilkerson, Senior Project Engineer; Haworth, Inc.

More than two years of persistent research and development led to the product design innovations that are Zody. Haworth commissioned the Human Performance Institute at Western Michigan University (WMU) to complete a research study to evaluate and quantify comfort of the low back while sitting in a task chair. Haworth also did extensive research and development internally that complemented, as well as utilized, the WMU research to help design Zody's lumbar and pelvic support (PAL™) and the tension/comfort of the mesh. Research was also conducted on the seat pan and other components of the chair to ensure the overall comfort and usability experience of the chair. Throughout the research, every effort was made to ensure that the comfort components of the chair were consistent with the intended design. The result of all of this work is what we have in Zody today; an ergonomically advanced, exceptionally comfortable, sleek, and stylish chair that works with the body, not against it.

Zody's Ergonomic Features and Adjustments, Teresa A. Bellingar, Ph.D., AEP, Senior Corporate Ergonomist, Haworth, Inc.

Ergonomic standards and guidelines recommend several working postures – sitting while reclining, upright, or in forward tilt; standing or alternating between sitting and standing – recognizing that no one posture should be used for a long period of time. A good ergonomic chair allows users to sit in these different postures and provides features and adjustments with the ability to enhance the comfort, productivity, and overall well-being of the occupant. Zody is no exception. She has many ergonomic features; i.e., lumbar support, seat height, seat pan depth, and armrests just to name a few, which can be adjusted to maximize the comfort and usability for each individual user. Users must remember to take into consideration their workstation arrangement and the task being performed when adjusting Zody to meet their personal needs. In addition, constant fine-tuning of the chair's adjustments will yield the greatest benefits because movement is the key to a healthy and ergonomically sound office environment.