Ergonomics Guidelines for Office Chair Selection

Chair design contributes to the comfort and productivity of the workers. The chair can be a critical factor in preventing back fatigue as well as improving employee performance and efficiency. People who sit for long periods of time run a high risk of low-back injury, second only to those who lift heavy weights [1]. Management, professional, and office workers accounted for 23% of injuries and illness involving days away from work. The back was the primary body part affected and working position was the second highest source of injuries [2]. To reduce this risk the user must be able to sit and maintain the spine in a neutral posture. A properly designed and adjusted chair is essential to maintaining a neutral posture. Support is available from the local Safety and Occupational Health Office and on the Navy Ergonomics Subject Matter Expert web site- www.navfac.navy.mil/safety and click on ergonomics.

Some manufacturers are eager to label furniture and accessories "ergonomically correct" or "ergonomically designed," much like food products are liberally labeled "all natural" or "new and improved." In reality, a chair that meets the body type of one person might not fit the next. Therefore, what is "ergonomically correct" for one individual may cause injury to another.

Chair selection is best when based upon personal testing. People vary widely in their shapes and sizes, and manufacturers offer a range of sizes to meet these needs. The following chart contains key criteria to consider in chair selection. All adjustments should easily be made from the seated position.

Workers should use the chair in accordance with manufacturer's instructions and can contact their local Safety and Occupational Health office for additional information.

NOTE: Alternative seating such as exercise balls, ball chairs, and kneel chairs do not meet the minimum requirements below and are not considered acceptable office seating. The dimensions [3] below are intended to fit 90% of the population, special accommodations may be required for petite or tall individuals.

[1] Andersson "Epidemological Aspects of Low Back Pain in Industry" Spine, 6:1 (1981)
2 National Safety Council Injury Facts 05-06
[3] International Organization for Standardization 9241-5: 1998 and Business and Institutional Furniture Manufacturer's Association G1-200

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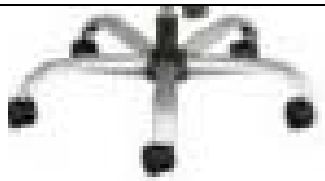
Chair Component	Chair Features	
Backrest	Either the backrest or lumbar support should be height adjustable. The mid-lumbar portion of the backrest should range in height from 6 to 10 inches from the seat pan and there should be space for the buttocks between the backrest and seat pan. Backrests size: minimum 14.2″ wide by 15″ high with a pronounced lumbar support that protrudes forward about 1 inch from the seat back. Tilt adjustable a minimum 15˚ within the range of 90˚ to 120˚	Range 6 “ to 10”  Minimum Size 14.2” W x 15” H 
Backrest (optional)	Locking or stopping tilt feature	
Seat Cushion	Seat cushions should be made of high strength mesh or high-density foam 1.5 to 2 inches thick with cloth fabric for breath ability. Minimal contouring, slightly concave with waterfall front edge.	
Seat Height	Pneumatic seat height adjustment, ranging from a minimum of 16 to 20.5 inches from the floor measured at the center of the seat pan	
Seat Pan	Fixed/nonadjustable: Maximum depth 16.9″. Adjustable seat pan depth range 15″ – 20″ Minimum seat pan width of 17.7″ Minimum user adjustable tilt range of 4˚ between 1˚ forward to 3˚ backward	 Depth 15”- 20” Minimum Width 17.7”
Seat Pan (optional)	Rocking mechanism	
Base:	Minimum of 5 star base Swivel 360 degrees. Casters should be appropriate for the flooring type. Soft-wheeled (rubber) casters for linoleum and tile, hard-wheeled (nylon) casters for carpet.	
Armrests (optional)	Adjustable height and width or removable. 9 to 12 inches in length, no sharp edges.	 Length 9” - 12”