

ECENTRIC WRIST CURLS ELASTIC BAND (PALM DOWN)

Patient advice tip

For computer workers there is very limited quality research regarding alterations in ergonomics to prevent or reduce symptoms,¹⁷⁶ to the point where systematic reviews conclude that specific recommendations for workstation adjustments must only be made in conjunction with other interventions such as ergonomics training, resistance training, psychosocial approaches and multidisciplinary rehabilitation.^{176,177} In their 2012 review (on upper extremity musculoskeletal symptoms) Kennedy et al.¹⁷⁷ found moderate evidence for the use of arm supports and limited evidence for ergonomics training plus workstation adjustments, new chair and rest breaks. Factors associated include:

- Number of hours of computer use (6 – 8 hours versus 0 – 2)^{178,179}
- Workplace time pressures (30 – 39 spent under a deadline per week versus 0 – 10)¹⁷⁸
- Continuous keyboard work¹⁸⁰
- Wrist ulna deviation¹⁸⁰
- Seating posture (although guidelines vary from upright to reclined, very limited research to guide)¹⁸⁰
- Individual wrist size (particularly for carpal tunnel)¹⁸⁰
- Unsupported forearms¹⁸¹
- Placement of the keyboards and mouse^{181,182}
- Long periods of work with a mouse^{182,183}
- Insufficient table space
- Chair comfort
- Low levels of co-worker support¹⁷⁹

One study involved a number of interventions that resulted in improvements in musculoskeletal discomfort at two months compared to a control group (but not at ten months. Recommendations included:

- Changing screen height
- Changing keyboard desk height
- Chair adjustment
- Mouse location
- Wrist support acquisition
- Forearm support acquisition

*Arm rests should be an optional feature as benefits vary for the individual but could reduce forearm and shoulder fatigue and discomfort. Woo et al.¹⁸⁴ report that arm rests should be padded, “cantilevered no more than 25.5 cm in length from the back of the chair.¹⁸⁵ They should be at least 44 cm apart, 6–9 cm wide and located at a height of 18–23 cm above the seat pan.¹⁸⁶ If the armrests are too high, they will force the user to raise and abduct the shoulders. Shoulder abduction increases the likelihood that the user will experience discomfort.¹⁸² Conversely, if the armrests are too low, they promote slumping and leaning to one side (California Department of Industrial Relations 2005). Armrests that are too wide apart force the user to abduct the shoulders, increasing the likelihood of user discomfort. Likewise, armrest length that is too long will force the user to sit far away from the input devices, resulting in undesirable extended reaches and/or other awkward postures.”¹⁸⁷