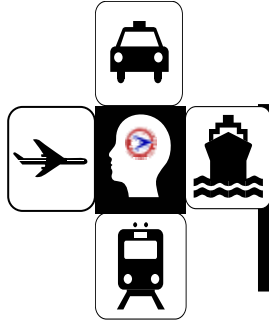


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Tech Brief

The Impact of Mode and Mode Transfer on Commuter Stress: Montclair Direct

FHWA-NJ-2004-005

November, 2005

SUMMARY

This study took advantage of a major improvement to the infrastructure of a commuter rail line to study the nature of commuter stress. Data was collected among groups of commuters before and after the new train line (The *Montclair Direct* service) went into effect. The new train service improved the commute of effected riders by reducing overall trip time and providing a one-seat ride from their home station to New York City.

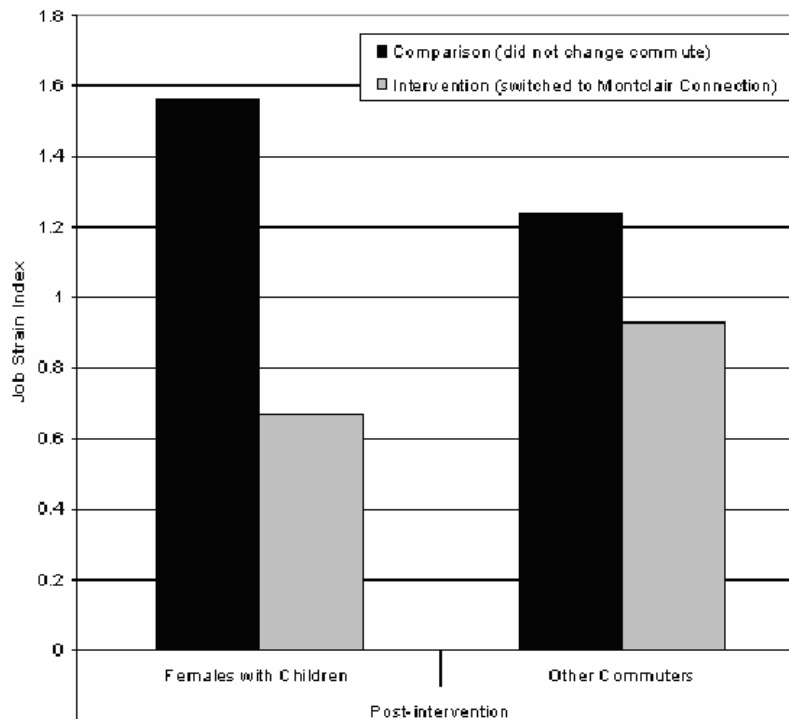
Stress was measured using a variety of means – psychological scales, reports of job strain, motivational tasks requiring deep concentration, and physiological markers (salivary cortisol).

The results indicated that the nature of the commute does, indeed, have a measurable and potentially important effect on the stress levels of riders. The physiological marker of stress (salivary cortisol) and the self-report measures of well being indicated that those commuters using the new service showed reduced stress in the post-change period, while those staying with the previous service did not. It also appears that commuting stress can “spill-over” into the

workplace, since the measures of job strain also showed improvement for those switching to the new service.

The study also found that one particular subgroup of commuters was particularly sensitive to these commuting conditions and changes. Women commuters who had children at home were more stressed originally than other commuter groups (including women commuters without children at home and male commuters). In addition, this same group of women commuters with children at home were the riders who were most improved by the implementation of the new train line on both motivational and job strain measures.

In recent years there has been a significant amount of work that indicates that long term exposure to stress can have serious health consequences. Transportation infrastructure system improvements that reduce levels of stress to which commuters are exposed for several hours per day over many years have the potential to provide significant beneficial effects on public health.



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A final report is available online at

<http://www.state.nj.us/transportation/refdata/research/>

If you would like a copy of the full report, please FAX the NJDOT, Bureau of Research, Technology Transfer Group at (609) 530-3722 or send an e-mail to Research.Bureau@dot.state.nj.us and ask for:

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