



2016/12/14 消費者安全に関する懇談会

データを活用した傷害予防 ～安全知識循環型イノベーションに向けて～



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事故予防は「見守りの問題」？ (子どもの見守りの科学の必要性)



BOX 1.3
Child supervision

Supervision is widely recognized as vital to protecting children from harm. Some estimates suggest that 90% of injuries to young children occur in or around their homes when they are supposedly being supervised by a caregiver. Despite the belief that childhood injury is often related to a lack of supervision, evidence to support this premise is limited.

There have been few attempts formally to define the term "supervision" in the context of injury prevention. A reasonable definition, consistent with common parlance, is that supervision refers to behaviors that are related to attention, care, and treatment, used by someone (the supervisor) to help another person (the supervisee) avoid or reduce the risk of injury. The risk increases substantially when the child lives with a single caregiver, or with a caregiver who is not the biological parent, or with a caregiver who is not the biological parent and is usually inadequate.

Good child supervision is likely to be an important intervention to protect children from injury. However, the role of supervision and guidelines for its age-appropriate application to various settings of injury risk need further investigation. Research to improve the effectiveness of supervision as an injury prevention strategy should include efforts to define and measure different types of supervision. Models of good supervision should be developed, and cultural influences on the ways supervision is conducted should be assessed. Interventions to influence the behavior of caregivers also need to be considered. A final critical step is to evaluate different supervisory strategies and measure their impact on reducing injuries.

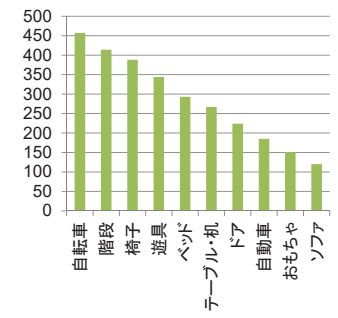
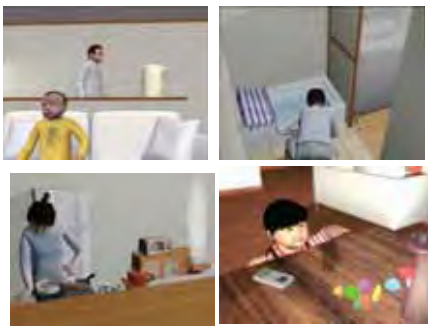
How much of the time the supervisor is actively supervising.
Look for evidence to measure these various constructs from a variety of sources.

There is considerable indirect evidence that associates supervision with a child's risk of injury. The risk increases substantially when the child lives with a single caregiver, to a home with multiple siblings, or with a substance-abusing caregiver – all of which can compromise the ability of a caregiver to attend closely to the child. In large families, supervision of younger children by older children may be common, but is usually inadequate.

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- 見守りの効果は検証されていない。
- しかも、何が見守りなのかの定義も曖昧。
- 研究ツールの開発と研究が必要。

子どもの傷害に関連した製品 (キッズデザイン製品の対象)



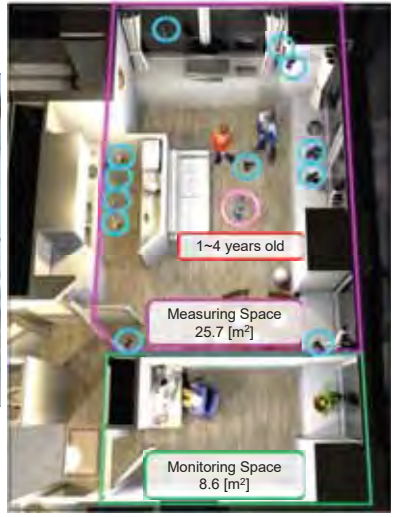
傷害に関連した主な製品
(産総研が保有する傷害データN=8,334)

- 自転車、ベビーベッド、おもちゃなどの子ども用製品だけでなく、大人用製品でも多くの傷害が発生。

メインユーザが大人の製品にもキッズデザイン
(子どもに配慮されたデザイン)が重要。

日常生活における実際の転倒の調査

子どもの転倒時のデータ収集と、衝撃吸収性能を備えた床における転倒衝突時の子どもへの影響についての検証 (H22年度 経産省 KD事業 共創PJ 永大産業(株))



加速度・ジャイロセンサ
IEEE1394カメラ(6台)

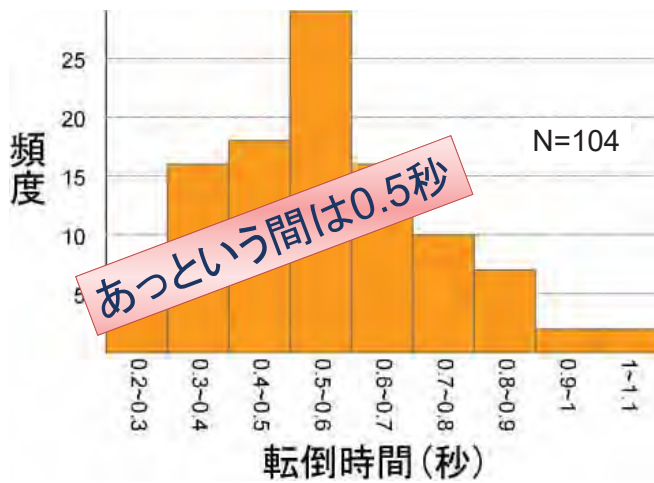


見守りによる転倒防止は困難

- 多くの転倒は発生から0.5[秒]
- 人間の視覚の平均的な反応時間は0.2[秒]
- 動作開始から0.3[秒]程度で子どもに到達する必要がある
- 子どもから1[m]の場所で見守っていても,
 - $1/0.3 = 3[m/sec]$
 - の速さで動く必要があるが, 初速は0であるため, さらに早く動く(時速20kmまで加速)必要性がある。

N=104回
生後11~50ヶ月 19人

転倒の科学 転倒時間



スポーツ外傷: 自打球で眼の傷害



地域と連携した科学
(秩父市中学校協働)