Closed-circuit television (CCTV)

Closed-circuit television cameras can be used to monitor public areas or personal property.

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Effect scale	Quality of evidence				
	Effect Impact on crime	Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
Overall reduction	■■■■ Very strong	■■■□ Strong	■■■□ Strong	■■■□ Strong	No information

Focus of the intervention

Closed-circuit television (CCTV) surveillance cameras are a technique of formal surveillance that can enhance or take the place of security personnel. CCTV cameras can be used to aid:

- crime prevention
- the detection of offenders
- crowd control or public order scenarios

The focus of the reviews are the prevention of personal and property crime.

This summary draws primarily on one meta-analytic review (Review one). Review one included 76 studies which used police and/or hospital records (for example, data on accident and emergency department admissions) to examine the effectiveness of CCTV in reducing crime.

The majority of studies in Review one were carried out in the UK (34 studies) and the USA (24 studies). The remaining studies were conducted in a range of other countries, including Canada, South Korea, Sweden, Norway, Spain, Poland and Australia.

Review two included a meta-analysis of 13 studies that were carried out in England and that used multiple outcome measures (victim-survey records and police records). The second review included case studies conducted in car parks, deprived housing estates and control rooms. It discussed interventions used alongside CCTV, such as street lighting, community wardens and police operations.

Review three is an earlier version of Review one, covering 41 studies, and contributes to the implementation and economic considerations sections of this summary. Information has only been included from Review three where it provides information that has not been offered within Review one or is used comparatively.

See also our information about body-worn cameras.

Effect – how effective is it?

Overall, the evidence suggests that CCTV has reduced crime, but there is some evidence that it has increased crime.

The meta-analysis in Review one found that CCTV was associated with a statistically significant decrease in crime. Overall, across a range of settings, crime was found to have decreased by 13% in places with CCTV compared to those without. Three of the 76 studies reported a statistically significant increase in crime.

The studies in Review one looked at the effectiveness of CCTV on different crime types. The meta-analysis showed that drug-related crimes decreased by 20% (six studies) and vehicle and property crime decreased by 14% (23 studies and 22 studies respectively) in places that had CCTV compared to those that did not. No overall statistically significant effect was observed for violent crime (29 studies) or disorder (six studies).

Review one reported that CCTV did not overall lead to crime displacement – only six of the 50 studies that included adjacent treatment and control areas reported evidence of displacement.

How strong is the evidence?

?Review one was sufficiently systematic that most forms of bias that could influence the study conclusions can be ruled out.

Review one demonstrated a high-quality design in terms of having a transparent and well-designed search strategy. It also featured a valid statistical analysis, sufficiently assessing the risk of publication bias in the analysis and considering the validity of the way outcomes are measured and/or combined. It considered the possibility of publication bias, as well as ensuring that only studies of comparable quality were pooled to create an overall effect size. The authors also conducted analyses of possible displacement and diffusion of benefits following the intervention.

Mechanism – how does it work?

The reviews suggested that CCTV might reduce crime by:

- increasing offenders' perception of the risk of getting caught
- increasing the actual risk of getting caught
- encouraging the public use of an area and affecting the criminals' perceptions of risk (by increasing informal surveillance by the public)
- improving citizen awareness to take additional precautions
- signalling improvements in the area to the public and encouraging community pride
- supporting the effective deployment of security staff to incidents
- reducing the number of criminal opportunities

However, none of these potential mechanisms were empirically tested.

Review two also noted that possible increases in crime could occur if:

- the police became overly reliant on the cameras and reduced their vigilance
- fewer people used the area due to the presence of cameras, which reduced levels of natural surveillance

However, the Review reported that CCTV did not appear to encourage or discourage the use of the area, which suggested no change in natural surveillance.

Review two also reported an increase in crime reporting and recording rates in some intervention areas, suggesting that CCTV has the potential to increase recorded crime by identifying crimes that would otherwise go unreported.

Moderators – in which contexts does it work best?

There is good evidence that the effectiveness of CCTV varies considerably by context.

The largest and most consistent effects of CCTV were observed in car parks and, to a lesser extent, residential areas. In car parks, crime decreased by 37% overall in treatment areas compared to control areas (based on eight studies). Five of the eight studies on CCTV in car parks demonstrated statistically significant reductions in crime.

In residential areas, crime decreased by 12% overall in treatment areas compared to control areas (based on 16 studies). Five of the sixteen studies on CCTV in residential areas reported statistically significant reductions in crime.

Review one reported more mixed outcomes when CCTV was used in other places. A meta-analysis of 33 studies found that CCTV in town or city centres did not have a statistically significant effect on crime overall (seven studies reported decreases in crime and three reported increases in crime in town or city centres with CCTV compared to those without).

Two of ten studies on CCTV in housing complexes reported statistically significant reductions in crime. Although none of the four studies on CCTV on public transport systems reported statistically significant effects on crime, the review authors commented that this may be due to the small sample size rather than the ineffectiveness of CCTV.

Review one found CCTV to be more effective when implemented in UK settings than in locations in other jurisdictions (largely the USA and South Korea).

Review two suggested that CCTV can also be effective in the suburbs of a city. However, it was not possible to distinguish whether reductions in crime were attributable solely to CCTV as they coincided with improvements in lighting.

Implementation – what can be said about implementing this initiative?

Review one found that CCTV was more effective when it involved active monitoring – where incidents could be monitored and proactively addressed in real time. Actively monitored CCTV schemes had statistically significant reductions in crime overall (15%), while schemes without active monitoring did not.

Review one also found that CCTV was more effective (34% decrease in crime) when it was implemented alongside multiple complementary interventions (for example, improved lighting, fencing, and signalling). CCTV implemented on its own or alongside one other intervention did not have a statistically significant effect in reducing crime.

Reviews one and two both linked the effectiveness of CCTV schemes to the level of coverage provided by the camera. Review two reported a statistically significant correlation between crime reduction and schemes with a higher degree of camera coverage.

Reviews two and three also observed that the types of camera tested in studies varied (for example, pan, tilt, and zoom cameras). The reviews noted that their technical specification (for example, ability to record in reduced light) should be considered during implementation. Success was linked to public and political support – which was thought to vary by context (for example, with cameras tending to attract more support in car parks) – and to funding. Implementation of CCTV was thought to benefit from being problem-oriented (for example, when based on a careful analysis of the local crime problem), having clear objectives, and project managers with relevant knowledge communicating with police.

Economic considerations – how much might it cost?

Review one did not discuss the costs of CCTV in detail. However, it did suggest that given the high cost of technology, introducing additional camera operators and/or patrol officers into CCTV operations may be more cost-effective than applying complementary technologies, such as gunshot detection technology (GDT).

Review three noted that mobile cameras – those that can be moved easily between locations – might be less costly than fixed cameras.

The reviews did not discuss the monetary value of the benefits from CCTV or provide a formal economic analysis.

General considerations

- The reviews noted that the primary studies varied in important ways including the duration of the follow-up periods (for example, those in the UK tended to have longer follow-up periods).
- Implementation of CCTV should consider possible threats to privacy and civil liberties.
- The effectiveness of CCTV on outcomes other than crime reduction – such as detection of crime, resource deployment or public order – are not considered.
- The authors highlight some gaps in the research base – for example, testing the mechanisms that explain how and why CCTV works.

Summary

There is evidence that CCTV reduces crime overall. There is also strong evidence that it is particularly useful in reducing crime in car parks and, to a lesser extent, residential areas.

The most significant reductions were for drug crimes, vehicle crime and property crime. There was no evidence of an effect on violent crime and disorder.

CCTV was found to be more effective when it:

- involved the active monitoring of live footage
- had higher levels of camera coverage
- was used in combination with multiple complementary interventions, such as street lighting.

This summary does not consider the effect of CCTV on detections, public order or other outcomes.

Reviews

Review one

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
■■■□ Strong	■■■□ Strong	■■■□ Strong	No information

Reference

- Piza, E. L., Welsh, B. C., Farrington, D. P., & Thomas, A. L. (2019) '**CCTV surveillance for crime prevention: A 40?year systematic review with meta?analysis'**, Criminology & Public Policy, 18(1), 135-159.

Review two

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
■■■□ Strong	■■■□ Strong	■■■□ Strong	No information

Reference

- Farrington David P, Gill Martin, Waples, Sam J and Argomaniz, Javier (2007) '**The effects of closed-circuit television on crime: Meta-analysis of an English national quasi multi-site**

evaluation' Journal of Experimental Criminology, 3, 21-38

Review three

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
No information	No information	■□□□ Low	No information

Reference

- Welsh, Brandon C. and Farrington, David P. (2009) '**Public Area CCTV and Crime Prevention: An Updated Systematic Review and Meta-Analysis**', Justice Quarterly, 26: 4, 716 — 745.

Additional resources

Welsh BC and Farrington DP. (2009) 'Public Area CCTV and Crime Prevention: An Updated Systematic Review and Meta-Analysis', Justice Quarterly, 26: 4, 716 — 745.

Summary prepared by

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