

## Cost Benefit Analysis Summary

### Results from All 250 Case Studies

Metric	Number of examples	Average	Median	95% CI	Range
WMSDs	90	59% ↓	56% ↓	5%	8%-100%
Incidence rate*	53	65% ↓	67% ↓	8%	9%-100%
Lost workdays*	78	75% ↓	80% ↓	5%	3%-100%
Restricted days*	30	53% ↓	58% ↓	11%	5%-100%
Workers' comp costs*	52	68% ↓	70% ↓	6%	15%-100%
Cost per claim*	7	39% ↓	50% ↓	28%	-20%-81%
Productivity	61	25% ↑	20% ↑	5%	-0.2%-80%
Labor costs	6	43% ↓	32% ↓	26%	10%-85%
Scrap/errors	8	67% ↓	75% ↓	18%	8%-100%
Turnover	34	48% ↓	48% ↓	8%	3%-100%
Absenteeism	11	58% ↓	60% ↓	15%	14%-98%
Payback period	36	0.7 years	0.4 years	0.3	0.03-4.4 years
Cost:Benefit ratio	6	1:45.5	1:10	1:45	1:2.5-1:140

\*Due to WMSDs

## Office Ergonomics Interventions

### Based on 40 different reports

Metric	Number of examples	Average	Median	95% CI	Range
Injuries*	5	61% ↓	50% ↓	20%	43%-100%
Incidence rate*	1	64% ↓	64% ↓	-	-
Lost workdays*	4	88% ↓	91% ↓	14%	70%-100%
Restricted days*	1	100% ↓	100% ↓	-	-
Workers' comp costs*	3	81% ↓	80% ↓	9%	74%-89%
Cost per claim*	1	81% ↓	81% ↓	-	-
Productivity	25	17% ↑	12% ↑	6%	-0.2%-64%
Errors	2	32% ↓	32% ↓	47%	8%-56%
Turnover	2	87% ↓	87% ↓	2%	86%-88%
Absenteeism	3	46% ↓	50% ↓	35%	14%-75%
ROI	3	78%	50%	81%	25%-160%
Payback period	9	0.4 years	0.4 years	0.22	0.06-1 year

\*WMSDs only

The best results were seen when organizations:

- Implemented a comprehensive program with management support.
- Incorporated ergonomics principles in the design stage.
- Had employees participate in planning changes.
- Evaluated workstations and provided individualized recommendations.
- Provided adjustable workstations and chairs with training to users.
- Evaluated and improved lighting, glare, temperature, noise and other environmental factors.
- Provided medical management of injury claims when they did occur.
- Evaluated the program and made continuous improvements.

## Healthcare Interventions

### Based on 36 different reports

Metric	Number of examples	Average	Median	95% CI	Range
Injuries*	21	61% ↓	60% ↓	10%	18%-100%
Incidence rate*	10	56% ↓	46% ↓	19%	16%-100%
Lost workdays*	15	74% ↓	80% ↓	10%	38%-100%
Restricted days*	8	49% ↓	43% ↓	26%	5%-100%
Workers' comp costs*	13	70% ↓	73% ↓	12%	35%-99%
Cost per claim*	1	20% ↑	20% ↑	-	-
Turnover	8	37% ↓	33% ↓	22%	3%-100%
Absenteeism	1	98% ↓	98% ↓	-	-
Payback period	4	0.28 years	0.17 years	0.46	0.06-0.71 years

\*WMSDs only

The best results were seen when organizations:

- Implemented a comprehensive program with management support.
- Incorporated ergonomics principles in the design stage.
- Had employees participate in planning changes.
- Evaluated workstations and provided individualized recommendations.
- Implemented zero lift programs, including lift assist equipment, training, and appropriate policies.
- Provided medical management of injury claims when they did occur.
- Evaluated the program and made continuous improvements.

## Ergonomics Programs (excluding office ergonomics)

### Based on 114 different reports

Metric	Number of examples	Average	Median	95% CI	Range
WMSDs	66	57% ↓	55% ↓	6%	8%-100%
Incidence rate*	24	57% ↓	50% ↓	12%	9%-100%
Lost workdays*	44	72% ↓	79% ↓	7%	15%-100%
Restricted days*	9	46% ↓	37% ↓	15%	16%-77%
Workers' comp costs*	42	67% ↓	68% ↓	7%	15%-100%
Cost per claim*	6	32% ↓	32% ↓	29%	-20%-76%
Productivity	6	46% ↑	40% ↑	24%	10%-80%
Labor costs	2	28% ↓	28% ↓	16%	20%-36%
Turnover	9	36% ↓	40% ↓	13%	3%-68%
Absenteeism	2	79% ↓	79% ↓	37%	60%-98%
Payback period	1	0.19 years	0.19 years	-	-
Cost:Benefit ratio	2	1:2.75	1:2.75	1:0.48	1:2.5-1:3

\*Due to WMSDs

The best results were seen when organizations:

- Implemented a comprehensive program with management support.
- Incorporated ergonomics principles in the design stage.
- Had employees participate in planning changes.
- Involved groups such as engineering, purchasing and facilities.
- Evaluated workstations and provided individualized recommendations.
- Provided engineering controls along with training to users.
- Evaluated and improved lighting, glare, temperature, noise and other environmental factors.
- Provided medical management of injury claims when they did occur.
- Evaluated the program and made continuous improvements.

## Ergonomics Individual Solutions (excluding office ergonomics)

Based on 96 different reports

Metric	Number of examples	Average	Median	95% CI	Range
WMSDs	18	64% ↓	62% ↓	13%	25%-100%
Incidence rate*	28	71% ↓	73% ↓	10%	14%-100%
Lost workdays*	30	77% ↓	84% ↓	10%	3%-100%
Restricted days*	20	54% ↓	61% ↓	15%	5%-100%
Workers' comp costs*	6	69% ↓	79% ↓	20%	33%-91%
Productivity	30	28% ↑	25% ↑	7%	7%-67%
Labor costs	4	51% ↓	54% ↓	37%	10%-85%
Scrap/errors	6	79% ↓	90% ↓	21%	35%-100%
Turnover	23	50% ↓	58% ↓	10%	3%-100%
Absenteeism	6	57% ↓	64% ↓	17%	23%-75%
Payback period	25	0.82 years	0.40 years	0.41	0.03-4.40 years
Cost:Benefit ratio	3	1:74	1:72	1:75	1:10-1:140

\*Due to WMSDs

Engineering controls (lift equipment, workstation changes, tool redesign) proved more effective than administrative changes (job rotation, work practices, team lifting), or training with no other interventions.

