



Recommended Loads during Lifting and Lowering: The ACGIH* Lifting TLV**

* American Congress of Governmental Industrial Hygienists

** Threshold Limit Value

To help workplaces design and assess lifting and lowering tasks, the **American Conference of Governmental Industrial Hygienists**, or **ACGIH** for short, developed an assessment tool.

The tool is called the **Lifting Threshold Limit Value**, or "**Lifting TLV**" for short.

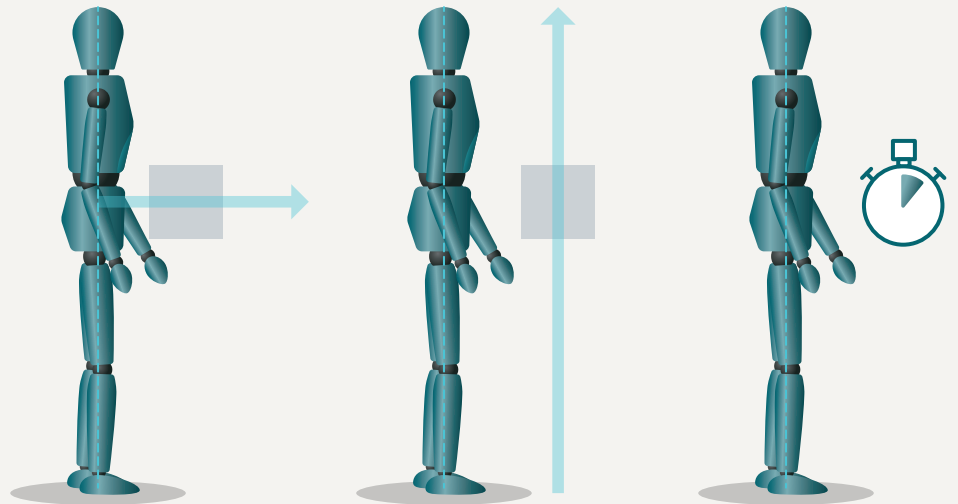
The tool recommends workplace lifting conditions under which it is believed nearly all workers may be repeatedly exposed, day after day, without developing work-related low back and shoulder disorders associated with repetitive lifting tasks.

The ACGIH Lifting TLV tool could be used to:

- Provide education to show how frequency, vertical height and reach affect MSD hazards during lifting and lowering
- Help recognize or identify lifting situations with MSD hazards during inspections and walkthroughs
- Perform an in-depth assessment of a lifting situation
- Help in the selection of changes by looking at how much the recommended weight increases or decreases with a change in the lifting situation:
"What if we..."

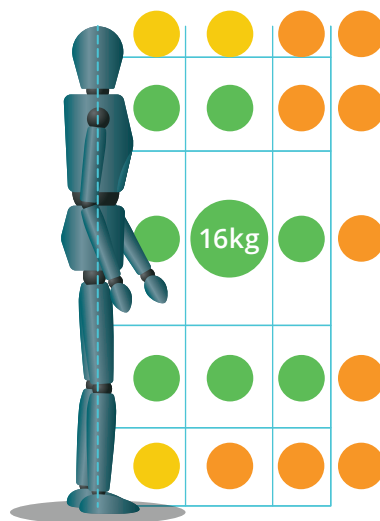
The recommended weight for lifting or lowering depends on 3 factors:

1. the **distance** of the load in front of the body
2. the **vertical height** of the load from the floor
3. the **frequency or duration** of lifting



The Lifting TLV uses a grid system showing vertical height and reach, and each zone has a recommended maximum weight.

For Infrequent or Short Duration Lifting in the zone shown, lifting 16kg or less is recommended.



Green lifting situations are clustered between "knees and nose" and close to the body.

Orange lifting situations have a recommended weight of zero (lifting should be avoided or controlled).

Note that these are seen for lifting from the floor, far from the body or above the shoulder.

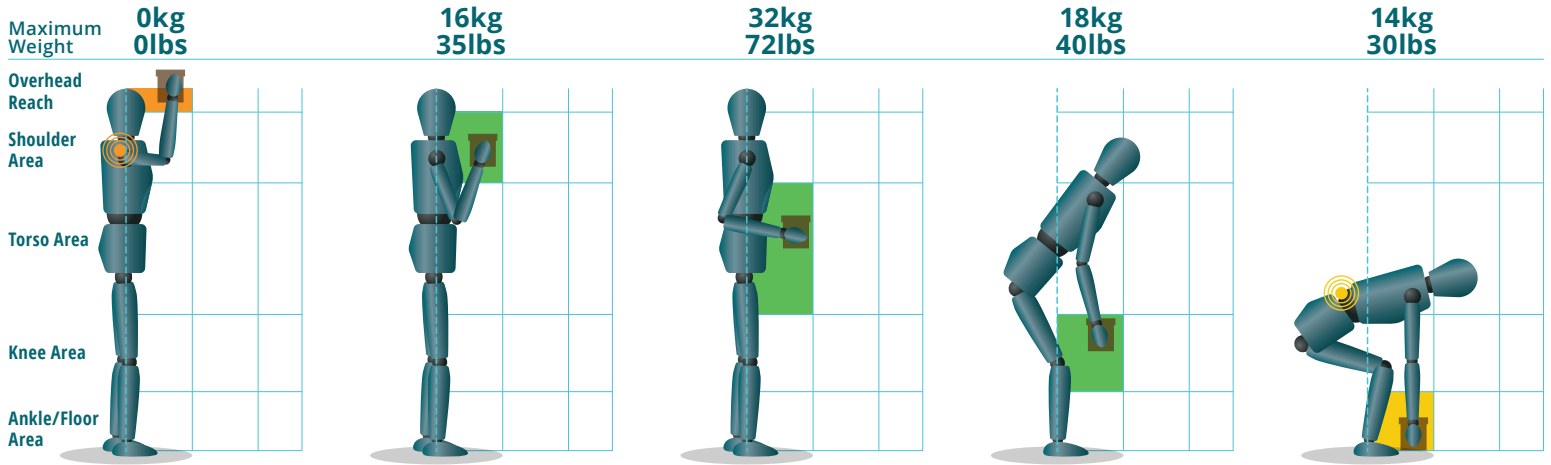
Yellow lifting situations should be further assessed. A floor level lift, even if close in to the body, is undesirable: recall the message "Store it off the floor".

Routine lifting should be avoided above shoulder height.

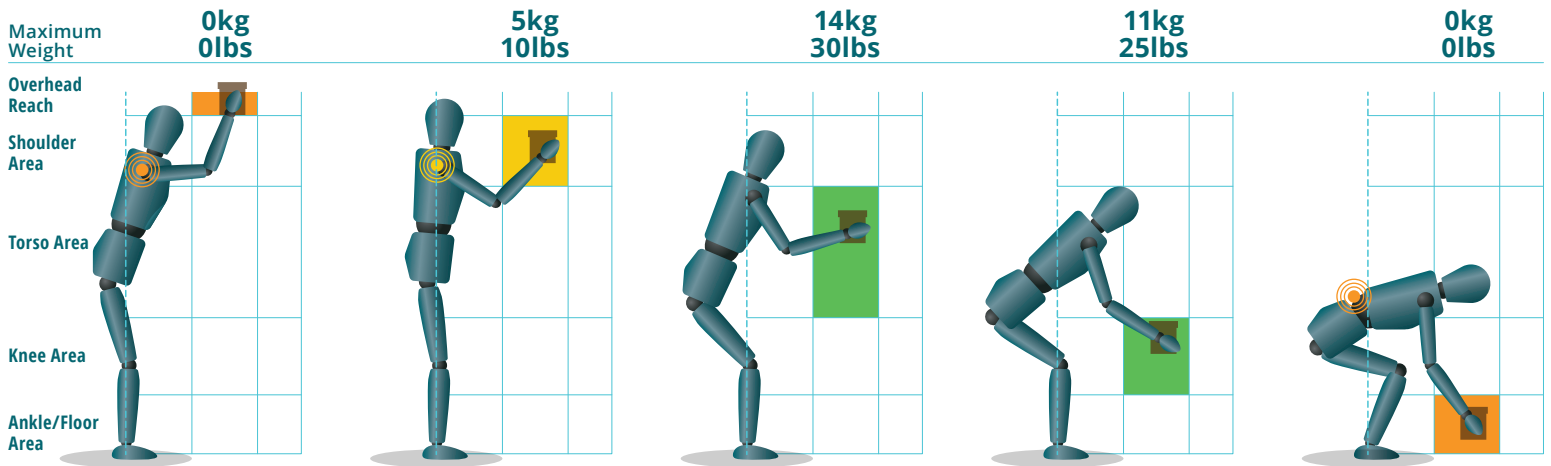
Three lifting frequency or duration situations are defined:

- Infrequent or Short Duration Lifting
- Moderate Frequency or Moderate Duration Lifting
- Repetitive or Long Duration Lifting

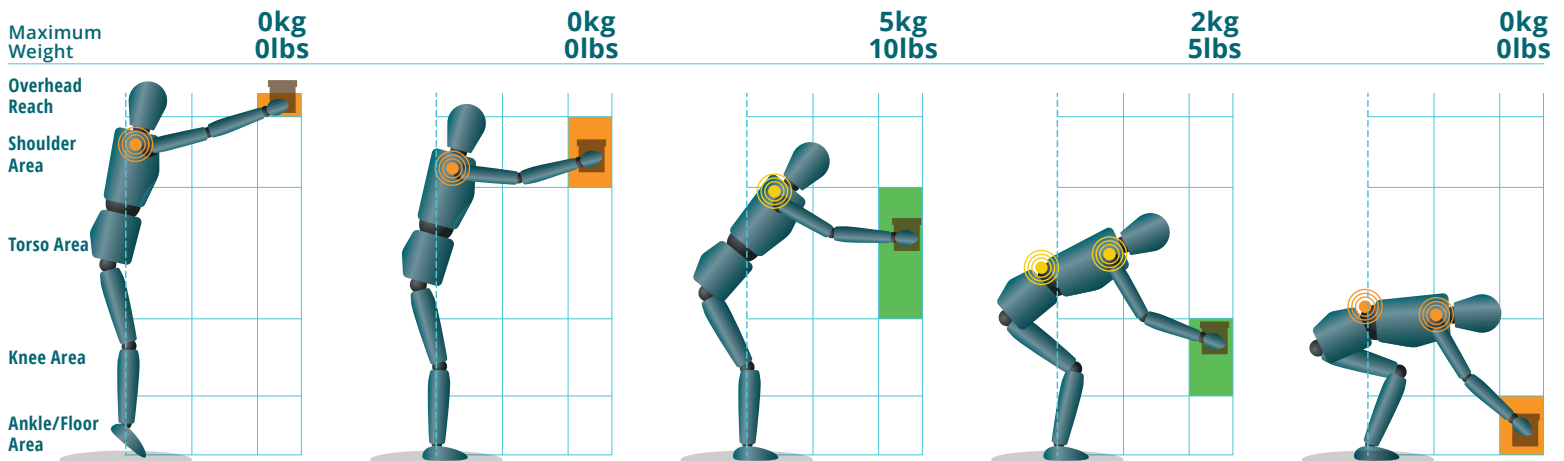
Infrequent Lifting: Close Reach



Infrequent Lifting: Intermediate Reach



Infrequent Lifting: Extended Reach



Lifting from the floor requires further assessment. Remember: "Store it off the floor!"

Effect Of Lifting Frequency Or Duration

	SHORT DURATION				MODERATE DURATION				REPETITIVE/LONG DURATION				
Overhead Reach													
Shoulder Area													
Torso Area													
Knee Area													
Ankle/Floor Area													

As with every tool, the Lifting TLV only gives reliable values under some conditions. If lifting takes place under less than perfect conditions, the recommended weight will be reduced.

Less than perfect conditions include one-handed lifting, more than 8hrs lifting or twisting during lifting.

If conditions like these are present, a person with specialist knowledge, such as an ergonomist, should be consulted.

ACGIH Lifting Threshold Limit Value (TLV), (2004) Threshold Limit Values (TLV) and Biological Exposure Indices (BEI) Guidelines. American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio.



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