

What is an unchecked call?

An unchecked external call is a Solidity bug where a contract uses a low-level call (`call`, `send`, `delegatecall`) but ignores its boolean return value. Unlike a normal function call, these do not revert on failure, they return `false`. If the contract does not check, it proceeds as though a failed transfer or call succeeded, leaving balances and state inconsistent and sometimes letting value disappear or logic break. The fix is to check every low-level call's return value (or use a safe wrapper). It maps to SWC-104.

HOW IT WORKS

01 How it works and example

A withdrawal that zeroes the balance regardless of whether the send worked:

```
function withdraw(uint amount) public {
    balances[msg.sender] -= amount;
    msg.sender.send(amount); // return value ignored
}
```

If `send` fails (out of gas, a reverting recipient), the funds are not transferred, but the balance was already reduced, the user loses funds, or, in other patterns, accounting drifts so the contract can be drained. Failed external calls that are assumed to succeed also break multi-step logic. Documented for defensive context.

LOW-LEVEL CALLS RETURN, NOT REVERT

call, send, and delegatecall return false on failure instead of reverting. Every one must have its result checked (require(ok)), or the contract will march on after a failure.

HOW TO DEFEND

- Check the return value of every low-level call: `(bool ok,) = addr.call{...}(""); require(ok);`
- Prefer higher-level calls or safe wrappers (a SafeERC20-style library) that revert on failure.
- Handle the failure path explicitly, do not assume success.
- Combine with checks-effects-interactions so a failed external call does not leave inconsistent state.
- Audit for any `call/send/delegatecall` whose result is discarded.

SOURCES

- [1] SWC Registry: Smart Contract Weakness Classification
- [2] Solidity docs: Security considerations
- [3] MITRE CWE-252: Unchecked Return Value

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