



Zero DTE Options

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What are 0-DTE Options?

- A **0DTE (Zero Days To Expiration)** option is an options contract set to expire at the end of the current trading day.
- This means that the value of a 0DTE option is mostly determined by the underlying asset's price movements on that day.

| SPX | | | | | | | | | | | | | |
|----------------------|------|-----------------|-------|-----------------------|----------|------------|-------|----------------|-------|--|--------|------------|--|
| 4,415.24 | | ↓ 67.89 (1.56%) | | V 2,231,547 | | HV30 14.80 | | IV30 11.54 | | C/P Ratio: BULLISH █ BEARISH █ | | | |
| Calls & Puts | | 10 Strikes | | All Volume & Open Int | | (W) Adj | | Trade In Chain | | | | | |
| Nov 13 (W) | | Nov 14 (W) | | Nov 15 (W) | | Nov 16 (W) | | Nov 17 AM | | Nov 17 | | Nov 20 (W) | |
| Last | Chg | Bid | Ask | Volume | Open Int | Strike | Last | Chg | Bid | Ask | Volume | Open Int | |
| CALLS | | | | | | PUTS | | | | | | | |
| Nov 24 (W) (13 days) | | | | | | | | | | | | | |
| 53.84 | 0.00 | 49.20 | 50.40 | 0 | 516 | 4395 | 26.90 | 0.00 | 29.50 | 30.50 | 0 | 232 | |
| 50.88 | 0.00 | 46.10 | 47.00 | 0 | 2,568 | 4400 | 28.50 | 0.00 | 31.40 | 32.30 | 0 | 733 | |
| 46.80 | 0.00 | 43.10 | 44.30 | 0 | 643 | 4405 | 31.20 | 0.00 | 33.40 | 34.30 | 0 | 34 | |
| 44.68 | 0.00 | 40.30 | 41.20 | 0 | 463 | 4410 | 32.40 | 0.00 | 35.50 | 36.40 | 0 | 60 | |
| 41.68 | 0.00 | 37.50 | 38.50 | 0 | 935 | 4415 | 34.30 | 0.00 | 37.70 | 38.60 | 0 | 77 | |
| 39.27 | 0.00 | 34.90 | 35.80 | 0 | 604 | 4420 | 36.35 | 0.00 | 40.00 | 40.90 | 0 | 31 | |
| 38.04 | 0.00 | 32.30 | 33.20 | 0 | 1,590 | 4425 | 39.92 | 0.00 | 42.40 | 43.40 | 0 | 63 | |
| 33.22 | 0.00 | 29.90 | 30.80 | 0 | 391 | 4430 | 41.58 | 0.00 | 45.00 | 46.20 | 0 | 94 | |
| 31.55 | 0.00 | 27.60 | 28.40 | 0 | 275 | 4435 | 43.70 | 0.00 | 47.70 | 48.90 | 0 | 17 | |
| 28.50 | 0.00 | 25.40 | 26.20 | 0 | 673 | 4440 | 47.61 | 0.00 | 50.50 | 51.70 | 0 | 27 | |



The Rise of ODTE Options:

- In 2005, the CBOE introduced weekly options, allowing investors to trade ODTE once a week. IN 2016, Monday and Wednesday options were added.
- Then in 2022, ODTE options on the SPX and SPDR S&P 500 ETF Trust (SP) were added for all five trading days.
- Due to the addition of ODTE options for each day of the trading week, their volume has skyrocketed. **According to Goldman Sachs, almost half of the trading volume on the SPX is ODTE trades.**
- ODTE options have gained popularity over the last 18 months thanks to increased market volatility, the search for short-term trading opportunities, and their inherent leverage. The Chicago Board Options Exchange (CBOE) has capitalized on this trend, with 56% of its revenue coming from its options business.



The Rise of ODTE Options:

CHART 3: ODTE Accounts for 43% of SPX Volume in 2023

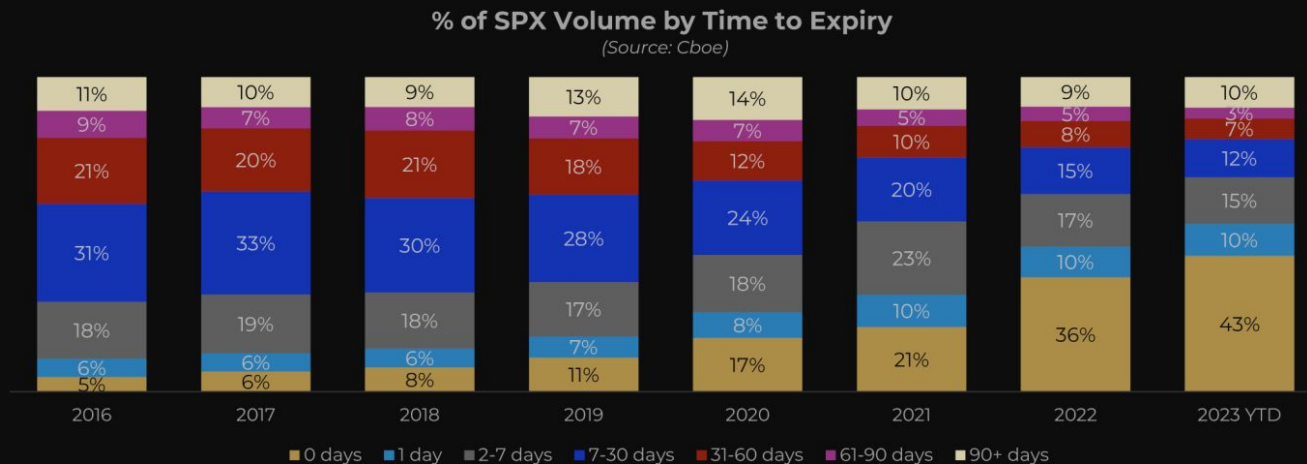


Chart 3 suggests that SPX ODTE has been growing, and SPX non-ODTE has been shrinking. In fact, as seen in chart 4 all expiries have seen material volume growth, however ODTE far outweighs the growth seen in other tenors. Non-ODTE and ODTE ADV are up 7% and 58% annualized, respectively from 2016 to 2023 YTD.



Why are 0DTE so Appealing?

- Short-dated options in general offer investors inexpensive ways to express a short-term view to complement a longer term strategy, to hedge a portfolio or to trade tactically around events, such as a Federal Reserve meeting.
- Outside of the array of benefits investors receive from trading index options, such as European exercise, cash settlement, and potentially favorable tax treatment, one of the main reasons people turn to SPX is due to its robust on-screen liquidity.
- Another reason so many investors use SPX as their preferred vehicle for options trading is due to its inexpensive cost to trade. To get the same notional exposure, an investor has the choice between trading 1 SPX contract, 10 SPY contracts or 2 S&P 500 E-Mini options on futures contracts. Given that brokerage fees are typically charged per contract, the total explicit costs to trade SPY options and E-Mini options on futures are significantly higher than trading the same notional exposure in SPX options.



Impact on Equity Prices:

- In a February 2023 research note, a J.P. Morgan analyst stated that they believe ODTE options could drop the market more than 20% in one day, citing it as “Volmageddon 2.0”.
- Many other banks and publications have also released research around ODTE options, attempting to model out the direct day-to-day impact they have on the broad market.
- Unfortunately, much of this research is inaccurate or simply fear-mongering, and has led to a false understanding of ODTE options and what they mean for the market.



Impact on Equity Prices:

- Many commentators take extreme views of ODTEs' effect on market volatility –they either believe that ODTEs always increase market volatility, or that ODTE trading will never have a major impact on the broader equity market. (Ambrus)
- The most consistent flow in ODTEs is option selling at the open, which actually tends to stabilize markets via dealer hedging. Thus, the idea that ODTEs are causing wild swings in an otherwise normal stock market is highly inaccurate. (Ambrus)



Who is trading 0DTE Options?

- A commonly held belief is that the retail community is the main participant in these short-dated options.
- SPX complex, we found a much more diverse set of market participants, including wealth managers/RIAs, market makers, speculators, event hedgers, volatility hedge funds, as well as retail. (Ambrus Capital)
- Survey indicated that institutional flow was actually a much larger proportion of 0DTE volume than retail. (Ambrus Capital)



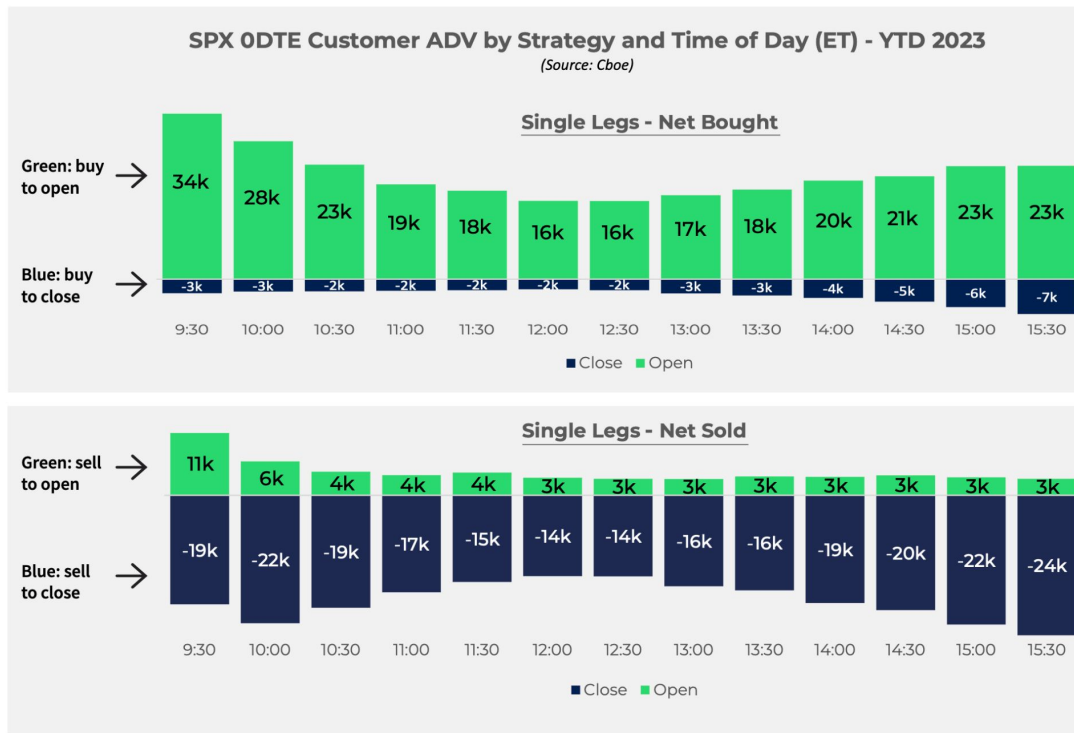
How are ODTE Options Traded?

- Increasing volume in ODTE suggests end users are trading them profitably. For this to be the case, the majority of end users would have to be net sellers of these options.
- One of the most common strategies among customers is selling either vertical call or put spreads (or both – called an iron condor) to harvest premium.
- The average strike width (volume weighted) for ODTE sell to open vertical spreads in 2023 YTD is slightly over twenty-one, less than 50 basis points of the index level at the time of writing.



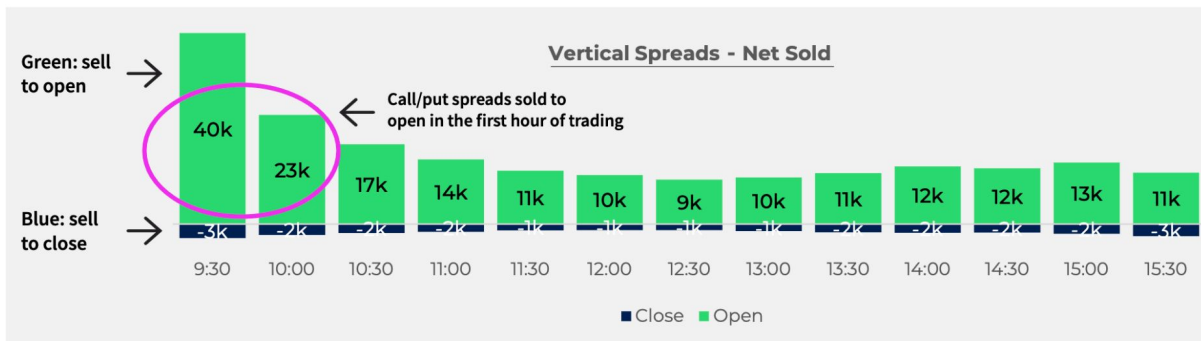
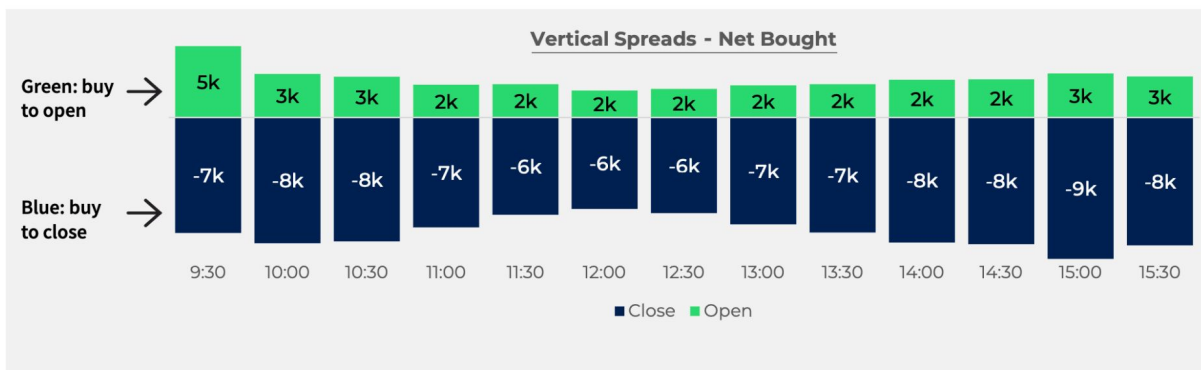
How are ODTE Options Traded?

CHART 5: Selling SPX ODTE Vertical Spreads Increases in Popularity





How are ODTE Options Traded?





Gamma:

- Shorter-term contracts carry a higher gamma profile.
- In notional, gamma, and volume terms, 0DTE options outweigh the rest of the U.S. derivatives market by a wide margin
- Gamma hedging involves dynamically adjusting the dealer's position in the underlying asset to offset the risk exposure associated with the options they have sold or bought. This is typically done by buying or selling the underlying asset in a way that keeps the net gamma exposure of the dealer's overall position close to zero.



Dynamic Intraday ODTE GEX Levels:

- **Zero Gamma (GWAP™)** = Below Zero Gamma level ODTE gamma is negative. Above Zero Gamma, ODTE gamma is positive. When gamma is positive, dealers and makers are shorting rips and buying dips. When gamma is negative, dealer and makers are selling dips and buying rips.
- **Call wall** = The ODTE Call Strike with the highest open interest and hence highest positive gamma. (Intraday Resistance Level, where dealer heading impact is the largest)
- **Put wall** = The ODTE Put Strike with the highest open interest and hence highest negative gamma. (Intraday Support Level, where dealer heading impact is the largest))



How to “Read” the Walls:

Zero Gamma Line (GWAP)

- Flat = Neutral
- Trending up = Bullish
- Trending down = Bearish
- Price above = Bullish
- Price Below = Bearish

Call Wall

- Rolling up = Bullish
- Rolling down = Bearish

Put Wall

- Rolling up = Bullish
- Rolling down = Bearish



Dynamic Intraday 0DTE GEX Levels:

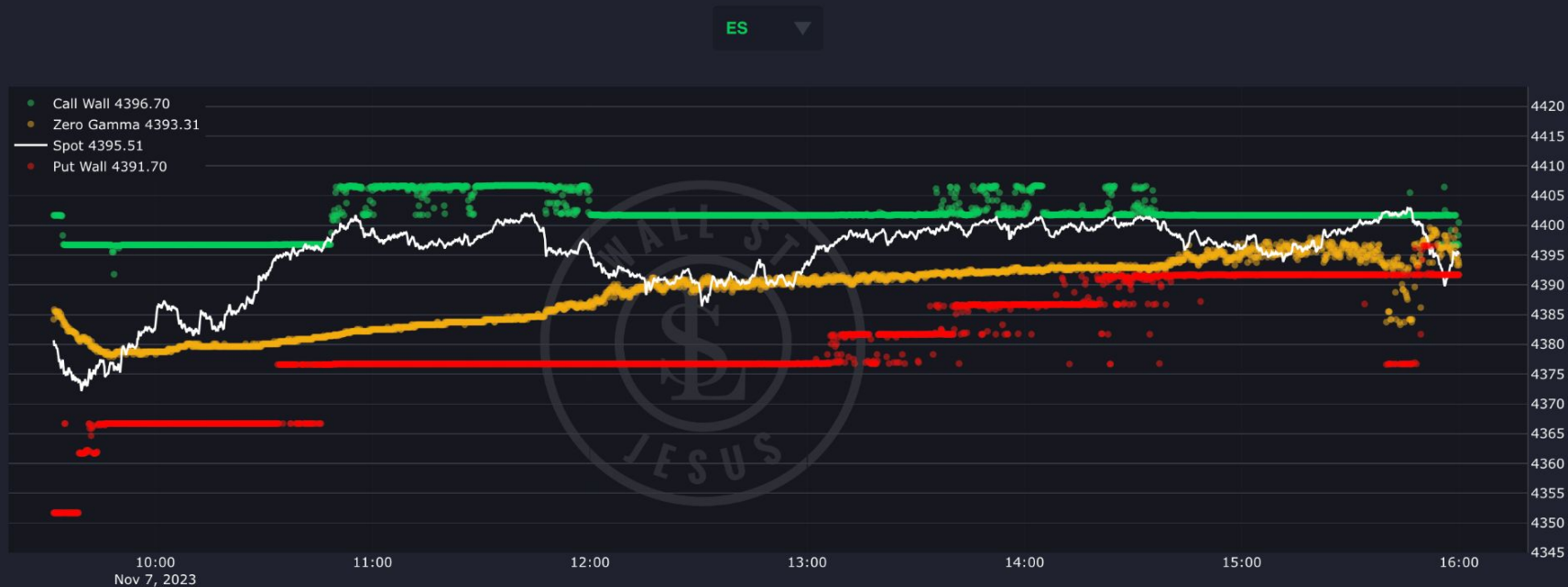
Monday 11/6





Dynamic Intraday 0DTE GEX Levels:

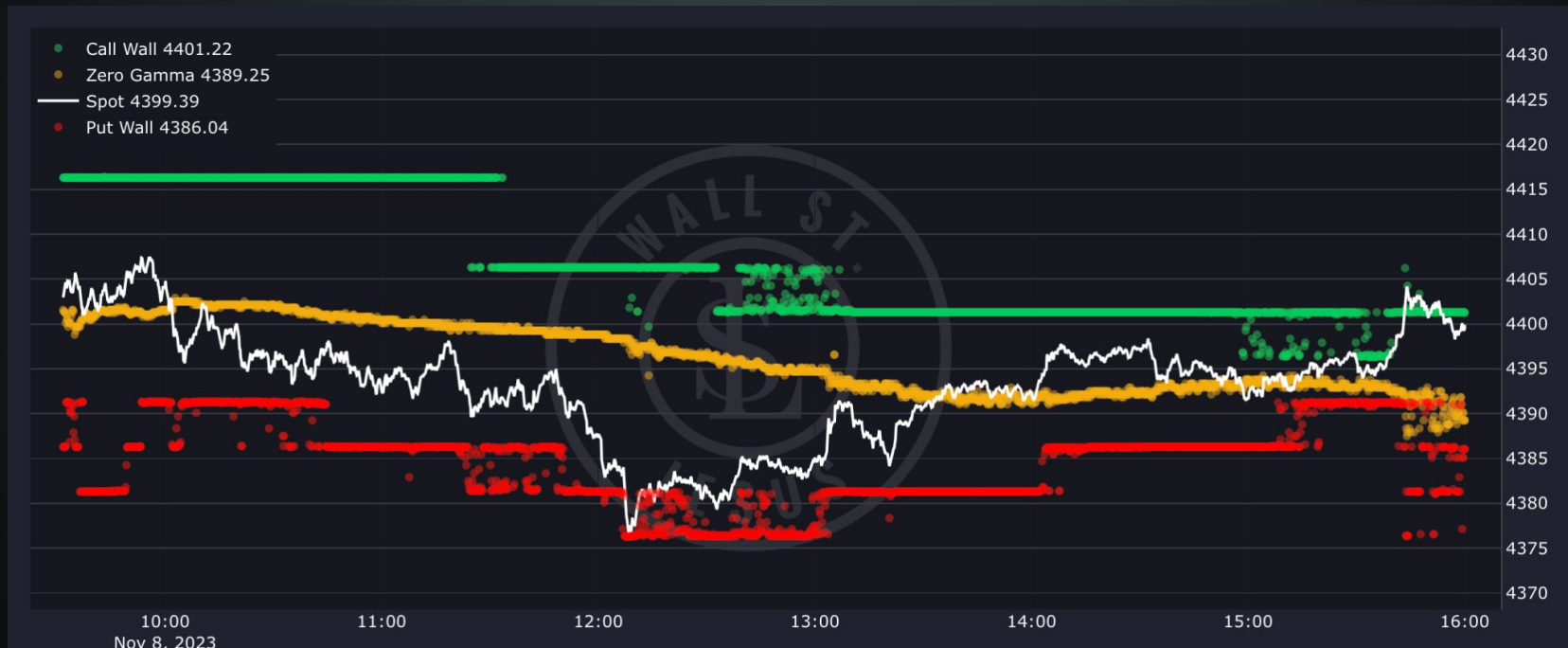
Tuesday 11/7





Dynamic Intraday 0DTE GEX Levels:

ES Wednesday 11/8





Dynamic Intraday 0DTE GEX Levels:

TSLA Thursday 11/9





Dynamic Intraday ODTE GEX Levels:

TSLA Thursday 11/9

| Received | Sym | Expires | Strike | Ref | Size | Type | Sentiment |
|----------|------|---------|--------|--------|---------|------|-----------|
| 12:00 | TSLA | 11-10 W | 205.00 | 212.13 | 95.37k | ⚡ | P |
| 11:55 | TSLA | 12-15 M | 200.00 | 212.32 | 1.047M | ⚡ | P |
| 11:54 | TSLA | 11-10 W | 210.00 | 212.94 | 164.85k | ⚡ | P |
| 11:47 | TSLA | 11-10 W | 210.00 | 212.07 | 115.74k | ⚡ | P |
| 10:41 | TSLA | 11-10 W | 210.00 | 214.37 | 168.83k | ⚡ | P |
| 10:14 | TSLA | 11-10 W | 210.00 | 214.68 | 187.44k | ⚡ | P |
| 09:59 | TSLA | 11-10 W | 215.00 | 216.75 | 288.53k | ⚡ | P |
| 09:48 | TSLA | 11-10 W | 200.00 | 216.28 | 24.00k | ⚡ | P |
| 09:46 | TSLA | 11-10 W | 215.00 | 217.17 | 133.60k | ⚡ | P |
| 09:40 | TSLA | 11-10 W | 217.50 | 216.97 | 173.11k | ⚡ | P |



Dynamic Intraday 0DTE GEX Levels:

NVDA Thursday 11/9





Why they Work?

- Institutions, funds, etc want to keep price contained within the walls.
- Dealers and makers need to hedge the most when the levels reach a wall.
- **Liquidity = Magnet.** The high open interest represents levels of high liquidity. Price tends to seek out high liquidity levels so we often see price get “pulled” towards the call wall and put wall.



Writing Strategies.

- Sell call premium farther out of the money when price tests the call wall
 - Here you're going to get a better volatility premium
 - Most retail options writers sell options when price LOOKS good
- Sell put premium farther out of the money when price tests the put wall
 - Same thing as the calls but inverse
- Risk Management here has to be tight guys usually a good rule of thumb is that if your option goes 100% against you





Long 0DTE Option Strategies:

- Long calls at the put wall
- Long puts at the call wall
- These are solid trades because in reality you have a pretty good defined risk and you know where you gotta stop out you know where you're shooting for



Resources:

<https://www.bloomberg.com/press-releases/2023-09-05/the-phenomenal-rise-of-spx-0dte-options-exploring-growth-and-benefits>