

Performance Update

As of March 31, 2025

Apex VUL ®
Variable Life Insurance

- **Not a bank or credit union deposit or obligation**
- **Not insured by any federal government agency**
- **Not FDIC or NCUA-insured**
- **Not guaranteed by any bank or credit union**
- **May go down in value**



Apex VUL®

Apex VUL is a flexible premium adjustable variable life insurance policy. This report gives information only about the performance of the investment options available through the policy. It does not give, and should not be understood to give, information about the overall performance of any policy. **Before purchasing a Apex VUL policy, you should request a personalized illustration from your financial representative to see examples of how policy charges can impact the performance of your policy.** The illustration will reflect the deduction of asset charges, (commonly referred to as a mortality and expense charge), premium charges and the monthly administrative, face amount, and insurance charges, as well as any applicable rider charges specific to the policy. Additionally, if you currently own a policy, you can obtain current illustrations of policy values by contacting your personal financial representative, or by clicking on "contact us" on our web site, or by calling us at (800) 272-2216, Monday – Friday, 8 a.m. to 8 p.m. Eastern Time.

The investment performance figures in this report are based on actual historical performance of the investment options for the periods shown, including for those time periods that begin prior to this policy's availability date. In most states, the policy first became available on November 21, 2020. For periods less than one year, the total return is not annualized. For periods greater than one year, the average annual total return for the time periods is shown.

Past performance is no indication of future results. This update contains the most recent month-end performance. Since performance changes daily, the current performance may be lower or higher than the performance reflected in this update. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. For the most recent month-end performance information, visit our website at www.massmutual.com or call the MassMutual Customer Service Center at (800) 548-0073, Monday – Friday, 8 a.m. to 5 p.m. Eastern Time.

Investing involves risk, including the loss of principal. Each investment choice underlying the policy has broad risks that apply to all investment choices, such as market risk, as well as specific risks inherent in particular types of investment choices that may subject your policy to greater risk and volatility than the general market.

This material must be preceded or accompanied by the [current prospectus for the Apex VUL insurance policy and the prospectuses or \(summary prospectuses, if available\) for its underlying investment choices](#). Before purchasing a policy, investors should carefully consider the investment objectives, risks, charges and expenses of the policy and its underlying investment choices. Please read the prospectuses carefully before investing or sending money.

Interest Rates - Guaranteed Principal Account

The following are effective annual rates used to credit interest on amounts in the Guaranteed Principal Account. These rates do not apply to any policy loan amounts. Current Interest Rate as of: 5/1/24 4.05%; 6/1/24 4.05%; 7/1/24 4.05%; 8/1/24 4.05%; 9/1/24 4.05%; 10/1/24 4.05%; 12/1/24 4.05%; 1/1/25 4.05%; 2/1/25 4.05%; 3/1/25 4.05%; 4/1/25 4.15%.

Market Indices as of March 31, 2025

	YTD	1 Year	3 Years	5 Years	10 Years
S&P 500 Index	-4.27%	8.25%	9.06%	18.59%	12.50%
MSCI ACWI Ex USA NR USD	5.23%	6.24%	4.48%	10.92%	4.98%
Russell 2000 Total Return Index	-9.48%	-4.01%	0.52%	13.27%	6.30%
Bloomberg U.S. Aggregate Bond Index	2.78%	4.88%	0.52%	-0.40%	1.46%

Market indices have been provided for informational purposes only; they are unmanaged and reflect no fees or expenses. Individuals cannot invest directly in an index.

The Standard & Poor's 500 Index is an unmanaged measure of common stock total return performance in the U.S.

The Russell 2000 Total Return Index is a broad based, unmanaged index comprised of 2000 of the smallest U.S. domiciled company common stocks (on the basis of capitalization) that are traded in the United States on the New York Stock Exchange, the American Stock Exchange, and NASDAQ.

The Bloomberg U.S. Aggregate Bond Index is an unmanaged index of U.S. corporate bond issues, U.S. Government Securities and mortgage-backed securities.

Total Return Rates - Investment Funds

For the Period Ending: March 31, 2025

Total Returns for each fund are the actual historical rates and are net of all fund management fees and other operating expenses. Those returns do not reflect policy charges. Policy charges include: premium charges (i.e. sales load, state premium tax and DAC tax charges), and the monthly administrative, mortality and expense risk, face amount, and insurance charges and any applicable rider changes. If these charges were deducted, the returns would be significantly lower.

Separate Account Sub-account	Fund Inception Date	Endnotes	Cumulative YTD	Average Annual				
				1 Year	3 Years	5 Years	10 Years	Since Inception
Money Market								
MML U.S. Government Money Market 7-day yield 3.84%	12/15/1981	1	0.95%	4.57%	3.87%	2.30%	1.52%	*
Fixed Income								
Fidelity VIP Bond Index Portfolio - Initial	4/19/2018		2.67%	4.82%	0.36%	-0.69%		1.47%
Fidelity® VIP Strategic Income Portfolio - Initial Class	12/23/2003		0.61%	4.24%	2.13%	3.87%	2.68%	*
Invesco V.I. Global Strategic Income Fund - SERIES I	5/3/1993		3.26%	6.78%	2.61%	4.20%	1.65%	*
MML Dynamic Bond Fund - II	5/15/2015		2.83%	3.53%	0.05%	0.61%		1.67%
MML II High Yield Fund - II	5/3/2010		0.79%	8.01%	4.41%	7.54%	5.10%	*
MML II Inflation-Protected and Income Fund - Initial	8/30/2002		4.09%	6.80%	0.38%	3.22%	2.66%	*
MML II Managed Bond Fund - Initial	12/16/1981		2.75%	6.48%	1.05%	1.84%	1.89%	*
MML Short-Duration Bond Fund - II	5/3/2010		1.54%	6.91%	4.01%	3.50%	2.10%	*
MML Total Return Bond Fund - II	8/10/2010		3.09%	4.74%	-0.19%	-0.30%	1.30%	*
PIMCO Income Portfolio - Institutional Class	4/29/2016		2.89%	6.30%	3.59%	4.37%		3.61%
Vanguard VIF Global Bond Index Fund	9/8/2017		1.76%	4.37%	0.63%	-0.88%		0.96%
Asset Allocation								
MML Aggressive Allocation Fund - Initial	8/31/2007	3	-0.77%	4.36%	5.60%	13.44%	7.63%	*
MML American Funds Core Allocation Fund - Service 1	8/15/2008		0.09%	5.97%	5.17%	10.13%	6.65%	*
MML Balanced Allocation Fund - Initial	8/31/2007	3	0.92%	4.86%	3.33%	8.05%	5.04%	*
MML Conservative Allocation Fund - Initial	8/31/2007	3	1.32%	4.88%	2.85%	6.93%	4.44%	*
MML Growth Allocation Fund - Initial	8/31/2007		-0.13%	4.56%	4.80%	11.50%	6.71%	*
MML iShares 60/40 Allocation Fund - II	2/10/2022		-0.20%	4.98%	3.60%			3.48%
MML iShares 80/20 Allocation Fund - II	2/10/2022		-1.27%	5.36%	4.84%			4.98%
MML Moderate Allocation Fund - Initial	8/31/2007	3	0.55%	4.66%	3.89%	9.55%	5.63%	*
Balanced								
MML II Blend Fund - Initial	2/2/1984		-1.92%	6.24%	5.27%	10.89%	7.60%	*
Large Cap Value								
American Funds IS Washington Mut Inv Fund - Class 2	7/5/2001		0.30%	9.42%	9.41%	18.41%	10.26%	*
MML Equity Income Fund - Initial	5/1/2006	5	3.96%	6.71%	6.16%	16.88%	8.81%	*
MML Fundamental Value Fund - II	8/10/2010		0.00%	3.16%	7.52%	18.53%	8.68%	*
MML II Equity Fund - Initial	12/31/1973	6	3.61%	10.46%	9.05%	18.71%	9.48%	*
MML Income & Growth Fund - Initial	5/1/2006		1.73%	7.98%	7.87%	18.95%	9.63%	*
Large Cap Blend								
Columbia VP Contrarian Core Fund - Class 1	4/30/2012		-4.56%	6.58%	9.33%	18.69%	12.13%	*
Fidelity VIP Contrafund Portfolio - Initial	1/3/1995		-5.50%	8.15%	11.24%	18.94%	12.71%	*
Fidelity VIP Total Market Index Portfolio - Initial	4/17/2018		-4.82%	7.01%	8.16%	18.09%		12.04%
Invesco V.I. Main Street Fund - SERIES I	7/5/1995		-4.41%	5.20%	7.38%	16.25%	10.56%	*
MML Equity Index Fund - III	5/1/2000		-4.30%	8.08%	8.89%	18.46%	12.36%	*
MML Focused Equity Fund - II	12/8/2011		-0.94%	3.84%	5.43%	13.50%	10.72%	*
MML Fundamental Equity Fund - II	12/8/2011		-4.44%	5.21%	7.31%	16.19%	12.69%	*
MML Sustainable Equity Fund - Initial	5/1/2006	5	-7.21%	0.26%	7.10%	16.03%	10.83%	*
Large Cap Growth								
Macquarie VIP Growth Series - Service	7/13/1987	13	-6.92%	5.14%	8.46%	17.78%	13.90%	*
MML American Funds Growth Fund - Service 1	8/15/2008	7, 3, 2	-7.27%	8.18%	8.72%	19.89%	14.77%	*
MML Blue Chip Growth Fund - Initial	5/1/2006	5	-9.28%	7.88%	8.60%	14.93%	12.76%	*
MML Large Cap Growth Fund - Initial	5/1/2006	5	-9.30%	8.22%	13.20%	18.69%	13.68%	*
Small/Mid Cap Value								
MML Mid Cap Value Fund - Initial	5/1/2006	5	2.09%	5.71%	4.18%	14.93%	8.11%	*
MML Small Company Value Fund - II	2/27/2009		-6.32%	-4.31%	1.50%	14.50%	7.45%	*
MML Small/Mid Cap Value Fund - Initial	5/1/2006	5	-5.65%	-2.87%	2.76%	17.99%	6.88%	*
Small/Mid Cap Blend								
BlackRock Small Cap Index V.I. Fund - I	1/29/1998		-9.51%	-4.17%	0.38%	13.12%	6.09%	*
Fidelity VIP Extended Market Index Portfolio - Initial	4/17/2018		-7.03%	-2.57%	2.04%	15.70%		6.44%
MML II Small Cap Equity Fund - Initial	6/1/1998		-5.98%	-0.73%	3.77%	17.55%	8.15%	*
Vanguard VIF Mid Cap Index Fund	2/9/1999		-1.58%	5.03%	4.38%	16.08%	8.78%	*
Small/Mid Cap Growth								
Invesco V.I. Discovery Mid Cap Growth Fund - SERIES I	8/15/1986		-12.60%	-6.43%	0.70%	11.28%	9.22%	*
Janus Henderson VIT Enterprise Portfolio Institutional Class	9/13/1993		-4.04%	2.09%	1.61%	12.52%	9.84%	*
MML Mid Cap Growth Fund - Initial	5/1/2006	5	-7.59%	-5.67%	2.34%	11.71%	8.64%	*

Separate Account Sub-account	Fund Inception Date	Endnotes	Cumulative	Average Annual				
			YTD	1 Year	3 Years	5 Years	10 Years	Since Inception
MML Small Cap Growth Equity Fund - Initial	5/3/1999		-8.78%	-4.66%	-0.47%	13.01%	7.57%	*
International/Global								
American Funds IS Global Small Cap Fund -Class 2	4/30/1998		-6.57%	-6.42%	-2.83%	7.69%	4.62%	*
American Funds IS New World Fund - Class 2	6/17/1999		1.67%	3.06%	3.03%	10.55%	6.10%	*
Fidelity VIP International Index Portfolio - Initial	4/17/2018		5.99%	6.42%	5.00%	11.18%		5.12%
Fidelity® VIP Overseas Portfolio - Initial	1/28/1987		6.19%	2.70%	7.31%	12.85%	6.47%	*
Invesco Oppenheimer V.I. International Growth Fund - SERIES I	5/13/1992		0.54%	-5.35%	1.72%	7.86%	4.02%	*
Invesco V.I. Global Fund - SERIES I	11/12/1990		-5.58%	-1.36%	6.28%	13.71%	8.45%	*
Janus Henderson VIT Overseas Portfolio Institutional Class	5/2/1994		5.15%	2.62%	4.39%	14.01%	5.86%	*
MML Foreign Fund - Initial	5/1/2006	5	9.30%	8.86%	6.33%	12.97%	3.68%	*
MML Global Fund - II	5/1/2006	5	1.53%	1.68%	2.87%	11.58%	7.40%	*
MML II Strategic Emerging Markets Fund - II	5/1/2009	4, 9	2.49%	-0.79%	-0.41%	2.86%	1.94%	*
MML International Equity Fund - Service 1	5/1/2014		6.85%	4.16%	5.43%	14.92%	4.11%	*
Specialty								
Fidelity VIP Real Estate Portfolio - Initial	11/6/2002		2.91%	10.18%	0.19%	9.27%	3.72%	*
Fidelity® VIP Health Care Portfolio - Initial Class	7/18/2001		-1.21%	-3.41%	0.51%	6.87%	5.80%	*
Janus Henderson Global Technology and Innovation Portfolio - Institutional Class	1/18/2000		-10.04%	1.93%	10.70%	18.48%	17.68%	*
Macquarie VIP Asset Strategy Series -Standard	4/28/2017	12	1.50%	6.88%	5.98%	11.79%	5.47%	
MML Equity Rotation Fund - II	5/15/2015		-1.83%	-3.75%	4.05%	15.63%		
MML Managed Volatility Fund - Initial	5/1/2000	10, 8	-2.38%	6.76%	4.85%	7.97%	4.95%	*
Vanguard VIF Real Estate Index Fund	2/9/1999		2.66%	8.88%	-1.99%	9.26%	4.79%	*
Vest US Large Cap 10% Buffer Strategies VI Fund Class I	8/25/2022	11	-3.00%	5.66%				14.31%

MML Asset Allocation Funds
For the Period Ending: March 31, 2025

The Apex VUL policy contains six MML Asset Allocation Funds ("funds of funds") that are designed to help investors meet their financial goals. These funds consist of certain, but not all, underlying funds available within the Apex VUL policy. The percentages below represent the approximation of assets as of the report date. The percentages may vary from the target allocation, which can be found in the corresponding fund prospectus. The percentages below are rounded so they may not total 100%.

	MML Aggressive Allocation Fund	MML American Funds Core Allocation Fund	MML Balanced Allocation Fund	MML Conservative Allocation Fund	MML Growth Allocation Fund	MML Moderate Allocation Fund
Fixed Income						
AMER FDS INS BOND FD		36.41				
INVESCO VI GLOBAL STRATEGIC IN	0.34		1.71	2.06	0.85	1.36
MML DYNAMIC BOND FUND	1.95		10.15	12.03	5.08	8.16
MML HIGH YIELD FUND	0.05		0.25	0.30	0.12	0.20
MML INFLATION PROTECTED BD FD	0.38		1.96	2.35	0.97	1.55
MML MANAGED BOND FUND	3.24		16.63	19.85	8.35	13.35
MML SHORT DURATION BOND FUND	0.87		4.55	5.47	2.30	3.62
MML TOTAL RETURN BOND FUND	2.83		14.62	17.47	7.34	11.66
PIMCO VARIABLE INSURANCE TRUST	0.66		1.29	1.50	0.89	1.17
Total Fixed Income	10.32	36.41	51.16	61.03	25.90	41.07
International/Global						
AMER FD INS INTERNATIONAL FD		9.48				
MML FOREIGN FD	4.36		2.32	1.87	3.40	2.75
MML GLOBAL FD	4.49		2.55	2.05	3.77	3.04
MML INTERNATIONAL EQUITY FUND	12.65		6.82	5.33	10.32	8.20
MML STRG EMERGING MARKETS FUND	1.82		0.93	0.75	1.49	1.11
Total International/Global	23.32	9.48	12.62	10.00	18.98	15.10
Large Cap Equity						
AMER FDS INS BLUE CHIP INC GRT		27.25				
AMER FDS INS GRWTH INC FD		26.86				
MML BLUE CHIP GROWTH FD	8.73		4.65	3.74	7.17	5.66
MML EQUITY INCOME FD	7.64		4.20	3.38	6.42	5.14
MML FOCUSED EQUITY FUND	12.62		7.16	5.67	10.68	8.58
MML FUNDAMENTAL GROWTH FUND	6.00		3.17	2.54	4.81	3.85
MML FUNDAMENTAL VALUE FUND	7.48		4.04	3.22	6.14	4.93
MML INCOME AND GROWTH FD	3.29		1.75	1.45	2.80	2.18
MML LARGE CAP GROWTH FD	6.89		3.53	2.78	5.51	4.28
Total Large Cap Equity	52.65	54.11	28.50	22.78	43.53	34.62
Mid Cap Equity						
MML MID CAP GROWTH FD	5.11		2.83	2.28	4.27	3.40
MML MID CAP VALUE FD	4.15		2.37	1.90	3.49	2.80
Total Mid Cap Equity	9.26		5.20	4.18	7.76	6.20
Small Cap Equity						
MML SMALL CAP GROWTH EQUITY FD	1.08		0.61	0.50	0.91	0.73
MML SMALL COMPANY VALUE FUND	2.10		1.19	0.96	1.86	1.42
MML SMALL/MID CAP VALUE	1.27		0.71	0.58	1.06	0.85
Total Small Cap Equity	4.45		2.51	2.04	3.83	3.00
Total Allocation	100	100	100	100	100	100

MML AssetAllocation Funds (cont'd)
**For the Period Ending: March 31,
2025**

	MML iShares 60/40 Allocation Fund	MML iShares 80/20 Allocation Fund
Fixed Income		
ISHARES 1 5 YEAR INVESTMENT GR	4.98	4.98
ISHARES 20 YEAR TREASURY BOND	2.01	1.01
ISHARES BROAD USD HIGH YIELD C	1.00	1.00
ISHARES CORE INTERNATIONAL AGG	0.50	1.00
ISHARES CORE U.S. AGGREGATE BO	31.41	11.97
Total Fixed Income	39.90	19.96
International/Global		
ISHARES CORE MSCI EMERGING MAR	1.99	4.97
ISHARES CORE MSCI INTERNATIONAL	12.84	14.82
Total International/Global	14.83	19.79
Large Cap Equity		
ISHARES CORE DIVIDEND GROWTH E	3.02	3.02
ISHARES CORE S+P 500 ETF	9.02	8.02
ISHARES CORE S+P TOTAL U.S. ST	31.01	45.03
Total Large Cap Equity	43.05	56.07
Mid Cap Equity		
ISHARES CORE S+P MID CAP ETF	2.00	3.99
Total Mid Cap Equity	2.00	3.99
Total Allocation	100	100

Endnotes

- 1 You could lose money by investing in the Fund. Although the seeks to preserve the value of your investment at \$1.00 per share, it cannot guarantee it will do so. An investment in the is not a bank account and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. The Fund's sponsor is not required to reimburse the Fund for losses, and you should not expect that the sponsor will provide financial support to the at any time, including during periods of market stress. The yield quotation for this more closely reflects the current earnings of the than the total return quotation. It is an annualized rate based on results over the last seven days of the period, and is net of all recurring contract fees and charges.
- 2 Performance reflects share classes with 12(b)-1 fees from inception which reduces the fund's performance. Please see the fund prospectus for more information about this fee.
- 3 Funds offered in a fund-of-funds structure may have higher expenses than a direct investment in the underlying funds because a fund-of-funds bears its own expenses and indirectly bears its proportionate share of expenses of the underlying funds in which it invests.
- 4 The fund established a new class of shares, which is available with this policy, after it began its initial investment operations. The performance for the period prior to offering the new class shows the historical returns for the original class of shares, which were not subject to a 12b-1 fee. The performance shown from the inception date of the class available with this policy includes the fees and expenses of that share class, including a 12b-1 fee. A 12b-1 fee reduces a fund's performance.
- 5 The historical performance shown reflects a combination of the current underlying fund's performance, as well as the performance of a prior fund. The current fund's performance is reflected beginning on 5/1/06. The prior fund's performance covers the period between the date listed in the performance table and 4/30/06. This Allocation Fund does not make an investment in the underlying fund. The Fund's allocation is below 0.5%. When the fund has 10 years of performance history the Since Inception return is no longer shown.
- 6 Although the MML Equity Fund commenced operations on 9/15/1971, the information necessary to calculate returns is available only for 1974 and later years.
- 7 The underlying MML Fund does not buy investment securities directly, but instead invests in shares of a corresponding American Funds® "master" fund, which in turn purchases investment securities. The performance of the MML Fund will be lower than the American Funds® master fund because it represents an investment in the American Funds® master fund reduced by the MML Fund's fees. The performance for the period prior to inception of the MML Fund on August 15, 2008, shows the historical returns for the American Funds® master fund adjusted to reflect the MML Fund's fees at its inception (0.70%).
- 8 The portfolio is classified as "non-diversified", meaning it has the ability to take larger positions in a smaller number of issuers than a "diversified" fund. Non-diversified portfolios may experience greater price volatility.
- 9 The fund established a new class of shares, which is available with this policy, after it began its initial investment operations. The performance for the period prior to May 1, 2009 shows the historical returns for Service Class I shares. Performance for periods after May 1, 2009 shows the historical returns for the share class available with this policy and reflects the fees and expenses of that share class.
- 10 Formerly known as MML Large Cap Value Fund. The Fund's name, investment objective, and investment strategy changed on April 29, 2013. The performance results prior to April 29, 2013 would not necessarily have been achieved had the Fund's current strategy been in effect during that period.
- 11 Vest US Large Cap 10% Buffer Strategies VI Fund is available only for policies issued after April 19, 2024. This fund is not available for policies issued in New York.
- 12 Formerly known as Delaware Ivy VIP Asset Strategy.
- 13 Formerly known as Delaware Ivy VIP Growth.
- * When the fund has 10 years of performance history the Since Inception return is no longer shown.

Apex Variable Universal Life? is a non-participating, flexible premium, adjustable, variable life insurance issued by Massachusetts Mutual Life Insurance Company (MassMutual), Springfield, MA 01111-0001 and C.M. Life Insurance Company (C.M. Life), a wholly owned subsidiary of MassMutual. Apex is issued by MassMutual (MMVUL-2020 and ICC20-MMVUL in certain states, including North Carolina) in all states up to and including April 19, 2024 and in California and New York after April 19, 2024. Apex is issued by C.M. Life (CMVUL-2023 and ICC23-CMVUL in certain states, including North Carolina) in all other states after April 19, 2024.

Principal Underwriters:

MML Investors Services, LLC
MML Strategic Distributors, LLC

Subsidiaries of Massachusetts Mutual Life Insurance Company, 1295 State Street, Springfield, MA 01111-0001