

Performance Update

As of May 31, 2022

VUL GuardSM

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

VUL GuardSM

VUL GuardSM is a permanent life insurance policy that combines death benefit protection with the opportunity to accumulate policy value through investments in a separate account with underlying investment funds, and a guaranteed principal account. 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 VUL Guard policy. **It is strongly urged that you request a current illustration of policy values from your financial representative to see how policy charges can impact the performance of your policy.** The illustration will reflect the deduction of an asset charge, premium expense charges, surrender charges, and the monthly administrative, face amount, and insurance charges, as well as any applicable rider charges specific to your policy. To request an illustration, simply contact your personal financial representative, or click on "contact us" on our web site, or call the MassMutual Customer Service Center 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 May 1, 2003. For periods of one year or less, 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) 272-2216, Monday – Friday, 8 a.m. to 8 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 prospectuses \(or summary prospectuses, if available\) for the VUL Guard underlying investment funds](#). The funds' prospectuses contain more information about the funds' charges, expenses, risks and investment objectives. Please read the prospectuses carefully before investing or sending money. If you wish to receive additional prospectuses, request them from your personal financial representative or call the MassMutual Customer Service Center at (800) 272-2216, press 2, 8:00 a.m. to 8:00 p.m. (ET). Please note that VUL Guard is closed to new business. Existing policy owners, however, may continue to make premium payments under existing policies.

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 loan amounts.

Current Interest Rate as of: 7/1/21 3.00%; 8/1/21 3.00%; 9/1/21 3.00%; 10/1/21 3.00%; 11/1/21 3.00%; 12/1/21 3.00%; 1/1/22 3.00%; 2/1/22 3.00%; 3/1/22 3.00%; 4/1/22 3.00%; 5/1/22 3.00%; 6/1/22 3.00%.

Market Indices as of May 31, 2022

	YTD	1 Year	3 Years	5 Years	10 Years
S&P 500 Index	-12.76%	-0.30%	16.44%	13.38%	14.40%
MSCI ACWI Ex USA NR USD	-10.74%	-12.41%	6.49%	4.42%	6.39%
Russell 2000 Total Return Index	-16.57%	-16.92%	9.70%	7.72%	10.83%
Bloomberg U.S. Aggregate Bond Index	-8.92%	-8.22%	0.00%	1.18%	1.71%

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

Total Returns

For the Period Ending: May 31, 2022

Total Returns for each fund are the actual historical rates and are net of all fund management fees and other operating expenses. **These returns do not reflect the Separate Account asset charges or policy charges.** Policy charges include: premium expense charges, surrender charges, and the monthly administrative, face amount, and insurance charges. If these charges were deducted, the returns would be significantly lower.

Asset Category	Investment Fund	Fund Inception Date	Endnotes	Cumulative YTD	Average Annual			
					1 Year	3 Years	5 Years	10 Years
Money Market	MML U.S. Government Money Market (Initial Class) <i>7-day yield: 1.16%</i>	12/16/1981	1	0.01%	0.01%	0.38%	0.72%	0.37%
Fixed Income	Invesco V.I. Core Bond (Series I)	5/3/1993	*	-12.69%	-12.47%	-0.22%	0.93%	2.43%
	Invesco V.I. Global Strategic Income (Series I)	4/3/1985		-8.31%	-10.52%	-1.32%	-0.15%	1.86%
	MML Inflation-Protected and Income (Initial Class)	8/30/2002		-6.38%	-2.11%	4.36%	3.66%	2.04%
	MML Managed Bond (Initial Class)	12/16/1981		-9.99%	-8.85%	0.58%	1.68%	2.06%
Balanced	American Funds Insurance Series® Asset Allocation (Class 2)	8/1/1989	2	-9.74%	-4.99%	9.63%	7.81%	9.71%
	Janus Henderson Balanced (Service)	9/13/1993	2	-12.93%	-3.92%	9.50%	9.32%	9.52%
	MML Blend (Initial Class)	2/3/1984		-11.69%	-4.93%	9.17%	7.82%	9.26%
Large Cap Value	American Century VP Disciplined Core Value (Class 2)	10/30/1997		-6.18%	-2.02%	14.58%	11.14%	12.48%
	American Century VP Value (Class I)	5/1/1996		1.87%	5.43%	15.03%	10.00%	12.00%
	MML Equity (Initial Class)	12/31/1973	3	-3.87%	2.01%	14.70%	10.04%	11.99%
	T. Rowe Price Equity Income	3/31/1994		0.02%	3.54%	13.95%	10.22%	11.41%
Large Cap Blend	American Funds Insurance Series® Growth-Income (Class 2)	2/8/1984	2	-12.40%	-3.57%	12.54%	11.40%	13.43%
	Fidelity® VIP Contrafund® (Initial Class)	1/3/1995		-20.63%	-7.10%	15.57%	12.35%	13.41%
	Invesco V.I. Main Street (Series I)	7/5/1995		-15.60%	-5.92%	12.57%	9.86%	12.46%
	Invesco V.I. Diversified Dividend (Series I)	3/1/1990	4	-0.37%	2.89%	10.81%	7.42%	11.27%
	MFS® Investors Trust (Initial Class)	10/9/1995		-12.34%	-2.59%	13.69%	11.74%	13.35%
Large Cap Growth	MML Equity Index (Class II)	5/1/1997	5	-12.83%	-0.57%	16.17%	13.10%	14.10%
	Goldman Sachs Strategic Growth (Institutional)	4/30/1998	6	-26.64%	-14.65%	14.25%	13.33%	14.46%
	Invesco V.I. Capital Appreciation (Series I)	4/3/1985		-22.60%	-11.35%	15.56%	12.86%	13.13%
	Janus Henderson Forty (Service)	5/1/1997	2, 7	-27.07%	-18.08%	13.79%	13.64%	14.95%
	MML Blue Chip Growth (Initial Class)	5/1/2006		-29.09%	-22.25%	8.18%	11.02%	14.01%
Small / Mid Cap Value	T. Rowe Price Blue Chip Growth	12/29/2000		-28.18%	-20.48%	9.02%	11.53%	14.25%
	Franklin Small Cap Value VIP (Class 2)	5/1/1998	2	-7.30%	-7.41%	13.78%	8.55%	11.23%
	DWS Small Cap Index VIP (Class A)	8/22/1997		-16.64%	-17.17%	9.36%	7.41%	10.58%
	MML Small Cap Equity (Initial Class)	6/1/1998		-13.47%	-9.80%	14.15%	9.91%	12.75%
	Invesco V.I. Discovery Mid Cap Growth (Series I)	8/15/1986		-27.67%	-17.65%	11.67%	12.13%	12.94%
Small / Mid Cap Growth	MFS® New Discovery (Initial Class)	5/1/1998		-25.71%	-27.62%	9.21%	12.06%	12.00%
	MML Small Cap Growth Equity (Initial Class)	5/3/1999		-20.27%	-18.70%	10.31%	11.04%	12.70%
	T. Rowe Price Mid-Cap Growth	12/31/1996	8	-19.90%	-13.54%	9.23%	10.08%	13.23%
	Invesco V.I. Global (Series I)	11/12/1990		-25.73%	-21.05%	8.58%	7.71%	10.87%
International / Global	Invesco Oppenheimer V.I. International Growth	5/13/1992		-23.29%	-20.37%	6.50%	2.85%	6.74%
	Janus Henderson Global Research (Service)	9/13/1993	2	-14.38%	-8.24%	11.90%	9.84%	11.54%
	Templeton Foreign VIP (Class 2)	5/1/1992	2	-2.43%	-9.72%	3.90%	0.24%	4.24%
Specialty	Invesco V.I. Health Care (Series I)	5/21/1997		-16.21%	-6.88%	10.01%	8.81%	11.30%
	Invesco V.I. Technology (Series I)	5/20/1997		-27.47%	-20.60%	13.10%	12.56%	13.10%
	MML Managed Volatility (Initial Class)	5/1/2000	9	-8.33%	-3.39%	5.61%	4.02%	6.18%

Endnotes

- 1 An investment in the Fund is neither insured nor guaranteed by the Federal Deposit Insurance Corporation or by any other government agency. Although the Fund seeks to maintain a stable net asset value per share, it is possible to lose money by investing in the Fund.
The yield quotation more closely reflects the current earnings of the Fund than the total return quotation. It is an annualized rate based on results over the last seven days of the period.
- 2 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.
- 3 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.
- 4 Effective April 29, 2011, Invesco V.I. Financial Services Fund merged into Invesco V.I. Dividend Growth Fund. Performance prior to that date reflects performance of the Invesco V.I. Financial Services Fund and performance on and after that date reflects performance of the Invesco V.I. Dividend Growth Fund.
- 5 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, 2000 shows the historical returns for Class I shares. Performance for periods after May 1, 2000 shows the historical returns for the share class available with this policy and reflects the fees and expenses of that share class.
- 6 The Fund may participate in the Initial Public Offering (IPO) market. The market value of IPO shares may fluctuate considerably due to factors such as the absence of a prior public market, unseasoned trading, the small number of shares available for trading, and limited information about the issuer.
- 7 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.
- 8 T. Rowe Price Mid-Cap Growth is not available as an investment choice for policies issued on May 1, 2004 or later.
- 9 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.
- * Effective April 29, 2022, Invesco V.I. Core Bond Fund merged into Invesco V.I. Core Plus Bond Fund. Performance prior to that date reflects performance of the Invesco V.I. Core Bond Fund and performance on and after that date reflects performance of the Invesco V.I. Core Plus Bond Fund.

VUL Guard (Policy Form P3-2003 in most states and P3-2003NC in North Carolina) is an individual, participating, flexible premium, adjustable, variable life insurance policy. Dividends are not expected to be paid. VUL Guard was issued by Massachusetts Mutual Life Insurance Company (MassMutual), Springfield, MA 01111-0001. We no longer offer VUL Guard for sale to the public. Policy owners may continue, however, to make premium payments to their VUL Guard policies.

Principal Underwriters:

MML Investors Services, LLC
MML Strategic Distributors, LLC

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

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